

Australia (non-U.S. corporation)  
 Commonwealth Scientific and Industrial Research  
 Organisation, Australian Capital Territory, Australia  
 (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6322827	B1	20011127
	WO 9903360		19990128
APPLICATION INFO.:	US 2000-462832		20000414 (9)
	WO 1998-AU563		19980716
			20000414 PCT 371 date
			20000414 PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	AU 1997-7992	19970716
	AU 1997-7995	19970716
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Sayala, Chhaya D.	
LEGAL REPRESENTATIVE:	McDermott, Will & Emery	
NUMBER OF CLAIMS:	22	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	6 Drawing Figure(s); 6 Drawing Page(s)	
LINE COUNT:	928	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a method of improving the growth rate and/or feed conversion efficiency of ruminant livestock during the starter/adaptation phase of feedlotting, wherein said method includes or consists of feeding to the ruminant livestock, protected carbohydrate such that 30-80% of said protected carbohydrate is capable of passing through the rumen undigested leaving 30-80% of said protected carbohydrate available for digestion post-ruminally.

L117 ANSWER 10 OF 11 USPATFULL on STN  
 ACCESSION NUMBER: 1998:147052 USPATFULL  
 TITLE: Antiparasitic compositions  
 INVENTOR(S): Hennessy, Desmond Ronald, North Epping, Australia  
                  Ashes, John Richard, Wahroonga, Australia  
                  Scott, Trevor William, Kellyville, Australia  
                  Gulati, Suresh Kumar, Eastwood, Australia  
                  Steel, John Winston, Castlecrag, Australia  
 PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Organisation, Parkville, Australia (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5840324		19981124
	WO 9427598		19941208
APPLICATION INFO.:	US 1996-549755		19960313 (8)
	WO 1994-AU272		19940524
			19960313 PCT 371 date
			19960313 PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	AU 1993-9030	19930526
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Mullis, Jeffrey C.	

LEGAL REPRESENTATIVE: Lowe Hauptman Gopstein Gilman & Berner  
 NUMBER OF CLAIMS: 24  
 EXEMPLARY CLAIM: 1  
 NUMBER OF DRAWINGS: 11 Drawing Figure(s); 11 Drawing Page(s)  
 LINE COUNT: 599

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention concerns the delivery of anti-parasitic agents to ruminant animals. More particularly, the invention concerns delivery of such agents in a controlled manner to enable the agent to have maximum effect on the parasite for longer times than is possible with conventional formulations. The composition of the invention comprises a benzimidazole, macrocyclic lactone, organophosphate, salicylanilide/substituted phenol, tetramisole or pyrimidine anti-parasitic agent dispersed in a medium the solubility characteristics of which are such as to ensure that, following oral administration, controlled amounts of the anti-parasitic agent become available to the parasite, either directly or by absorption into the ruminant blood plasma, during passage of the composition through the rumen, the abomasum and the intestine.

L117 ANSWER 11 OF 11 USPATFULL on STN

ACCESSION NUMBER: 75:67431 USPATFULL  
 TITLE: Feed supplements for ruminants comprising lipid encapsulated with protein-aldehyde reaction product  
 INVENTOR(S): Scott, Trevor William, Kellyville, Australia  
 Hills, Geoffrey Dean Loftus, Beaumaris, Australia  
 PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Research Organization, Australia (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 3925560		19751209
APPLICATION INFO.:	US 1973-359793		19730514 (5)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Yudkoff, Norman		
ASSISTANT EXAMINER:	Ribando, Curtis P.		
LEGAL REPRESENTATIVE:	Richards, Harris & Medlock		
NUMBER OF CLAIMS:	11		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	4 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	549		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for improving the utilization of lipid materials by ruminants comprising feeding ruminants an emulsion or emulsion product comprising homogeneous lipid bodies dispersed within a medium. The medium comprises the reaction product of a dietary protein and an aldehyde, said reaction product being substantially insoluble at a pH greater than about 5 and substantially soluble at a pH less than about 4. The lipid bodies disclosed are protected from degradation in the rumen but remain available for digestion in the abomasum or lower gut. Methods for preparing the emulsified product and ruminant milk and meat product produced with the aid of the emulsified products are also discussed herein.

substance identification.

L1	1 SEA FILE=REGISTRY ABB=ON	FORMALDEHYDE/CN
L35	6615 SEA FILE=USPATFULL ABB=ON	L1
L42	1617 SEA FILE=USPATFULL ABB=ON	BUTTER/CT OR CHEESE#/CT OR CHOCOLATE /CT OR DAIRY PRODUCTS/CT
L43	3332 SEA FILE=USPATFULL ABB=ON	MILK/IT
L44	507 SEA FILE=USPATFULL ABB=ON	(YOGHURT OR YOGURT OR FORMULA(L) INFA NT)/IT
L45	172 SEA FILE=USPATFULL ABB=ON	LACTATION/CT
L58	127923 SEA FILE=USPATFULL ABB=ON	FEED#/IT, TI, AB, CLM
L60	3 SEA FILE=USPATFULL ABB=ON	L35 AND L58 AND (L42 OR L43 OR L44 OR L45)

L1	1 SEA FILE=REGISTRY ABB=ON	FORMALDEHYDE/CN
L9	11 SEA FILE=REGISTRY ABB=ON	(60-33-3/BI OR 112-80-1/BI OR 121250-47-3/BI OR 2420-56-6/BI OR 2540-56-9/BI OR 32839-18-2/BI OR 32839-30-8/BI OR 463-40-1/BI OR 50-00-0/BI OR 57-10-3/BI OR 57-11-4/BI)
L10	10 SEA FILE=REGISTRY ABB=ON	L9 NOT L1
L35	6615 SEA FILE=USPATFULL ABB=ON	L1
L36	7805 SEA FILE=USPATFULL ABB=ON	L10
L37	203 SEA FILE=USPATFULL ABB=ON	FATTY ACIDS/CT (L) OMEGA/IT
L41	2659 SEA FILE=USPATFULL ABB=ON	RUMINANT/CT OR CATTLE/CT OR GOAT/CT OR SHEEP/CT OR LLAMA/CT
L46	206 SEA FILE=USPATFULL ABB=ON	(RUMEN? (2A) (BYPASS? OR PROTECT?))
L47	37 SEA FILE=USPATFULL ABB=ON	(RUMEN? (2A) (BYPASS? OR PROTECT?))/IT
L48	68 SEA FILE=USPATFULL ABB=ON	(POSTRUMIN? OR POST RUMIN?) OR (POSTRUMIN? OR POST RUMIN?)/IT
L57	34 SEA FILE=USPATFULL ABB=ON	(POSTRUMEN? OR POST RUMEN?) OR (POSTRUMEN? OR POST RUMEN?)/IT
L61	0 SEA FILE=USPATFULL ABB=ON	L35 AND (L36 OR L37) AND (L41 OR (L46 OR L47 OR L48) OR L57)

L1	1 SEA FILE=REGISTRY ABB=ON	FORMALDEHYDE/CN
L35	6615 SEA FILE=USPATFULL ABB=ON	L1
L58	127923 SEA FILE=USPATFULL ABB=ON	FEED#/IT, TI, AB, CLM
L62	22 SEA FILE=USPATFULL ABB=ON	L35 (L) L58
L63	3 SEA FILE=USPATFULL ABB=ON	SUPPLEMENT#/TI AND L62

=> s (l60 or l63) not l116

L119 3 (L60 OR L63) NOT L116 *previously printed w/ inventors March*

=> fil capl; d que 125; d que 153; d que 130

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FILE COVERS 1907 - 27 Sep 2004 VOL 141 ISS 14  
FILE LAST UPDATED: 26 Sep 2004 (20040926/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE

L1	1 SEA FILE=REGISTRY ABB=ON FORMALDEHYDE/CN	
L6	65508 SEA FILE=CAPLUS ABB=ON L1	
L9	11 SEA FILE=REGISTRY ABB=ON (60-33-3/B1 OR 112-80-1/B1 OR 121250-47-3/B1 OR 2420-56-6/B1 OR 2540-56-9/B1 OR 32839-18-2/B1 OR 32839-30-8/B1 OR 463-40-1/B1 OR 50-00-0/B1 OR 57-10-3/B1 OR 57-11-4/B1)	
L10	10 SEA FILE=REGISTRY ABB=ON L9 NOT L1	
L11	92096 SEA FILE=CAPLUS ABB=ON L10	
L12	2546 SEA FILE=CAPLUS ABB=ON FATTY ACIDS/CT(L)OMEGA/OBI	
L13	144 SEA FILE=CAPLUS ABB=ON L6(L)AGR/RL > Role AGR = agricultural use	
L14	95 SEA FILE=CAPLUS ABB=ON L6(L)FFD/RL FFD = food or feed use	
L15	3265 SEA FILE=CAPLUS ABB=ON RUMINANT/CT	
L16	42468 SEA FILE=CAPLUS ABB=ON CATTLE/CT	
L17	4857 SEA FILE=CAPLUS ABB=ON GOAT/CT	
L18	22143 SEA FILE=CAPLUS ABB=ON SHEEP/CT	
L19	23 SEA FILE=CAPLUS ABB=ON LLAMA/CT	
L20	28543 SEA FILE=CAPLUS ABB=ON BUTTER/CT OR CHEESE#/CT OR CHOCOLATE/CT OR DAIRY PRODUCTS/CT	
L21	78152 SEA FILE=CAPLUS ABB=ON MILK/CW	
L22	3486 SEA FILE=CAPLUS ABB=ON YOGHURT/OBI OR YOGURT/OBI	
L23	1374 SEA FILE=CAPLUS ABB=ON FORMULA/OBI(L) INFANT/OBI	
L24	15221 SEA FILE=CAPLUS ABB=ON LACTATION/CT	
L25	4 SEA FILE=CAPLUS ABB=ON (L11 OR L12) AND (L13 OR L14) AND (L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR L22 OR L23 OR L24)	

L1	1 SEA FILE=REGISTRY ABB=ON FORMALDEHYDE/CN	
L6	65508 SEA FILE=CAPLUS ABB=ON L1	
L13	144 SEA FILE=CAPLUS ABB=ON L6(L)AGR/RL	
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L27	537 SEA FILE=CAPLUS ABB=ON (RUMEN? (2A) (BYPASS? OR PROTECT?)) / BI	
L28	338 SEA FILE=CAPLUS ABB=ON (POSTRUMIN? OR POST RUMIN?) / BI	
L52	33 SEA FILE=CAPLUS ABB=ON (POSTRUMEN? OR POST RUMEN?) / BI	
L53	4 SEA FILE=CAPLUS ABB=ON (L13 OR L14) AND (L27 OR L28 OR L52)	

L1	1 SEA FILE=REGISTRY ABB=ON FORMALDEHYDE/CN	
L6	65508 SEA FILE=CAPLUS ABB=ON L1	
L9	11 SEA FILE=REGISTRY ABB=ON (60-33-3/B1 OR 112-80-1/B1 OR 121250-47-3/B1 OR 2420-56-6/B1 OR 2540-56-9/B1 OR 32839-18-2/B1 OR 32839-30-8/B1 OR 463-40-1/B1 OR 50-00-0/B1 OR 57-10-3/B1	

OR 57-11-4/BI)

L10 10 SEA FILE=REGISTRY ABB=ON L9 NOT L1  
 L11 92096 SEA FILE=CAPLUS ABB=ON L10  
 L12 2546 SEA FILE=CAPLUS ABB=ON FATTY ACIDS/CT(L) OMEGA/OBI  
 L15 3265 SEA FILE=CAPLUS ABB=ON RUMINANT/CT  
 L16 42468 SEA FILE=CAPLUS ABB=ON CATTLE/CT  
 L17 4857 SEA FILE=CAPLUS ABB=ON GOAT/CT  
 L18 22143 SEA FILE=CAPLUS ABB=ON SHEEP/CT  
 L19 23 SEA FILE=CAPLUS ABB=ON LLAMA/CT  
 L20 28543 SEA FILE=CAPLUS ABB=ON BUTTER/CT OR CHEESE#/CT OR CHOCOLATE/CT  
     OR DAIRY PRODUCTS/CT  
 L21 78152 SEA FILE=CAPLUS ABB=ON MILK/CW  
 L22 3486 SEA FILE=CAPLUS ABB=ON YOGHURT/OBI OR YOGURT/OBI  
 L23 1374 SEA FILE=CAPLUS ABB=ON FORMULA/OBI(L) INFANT/OBI  
 L24 15221 SEA FILE=CAPLUS ABB=ON LACTATION/CT  
 L30 2 SEA FILE=CAPLUS ABB=ON L6 AND (L11 OR L12) AND (L15 OR L16 OR  
     L17 OR L18 OR L19) AND (L20 OR L21 OR L22 OR L23 OR L24)

=&gt; s (l25 or l53 or l30) not 17

L120 7 (L25 OR L53 OR L30) NOT (L7) previously  
 printed

=&gt;

=&gt; dup rem l120,l118,l113,l115,l119

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 PROCESSING COMPLETED FOR L120  
 PROCESSING COMPLETED FOR L118  
 PROCESSING COMPLETED FOR L113  
 PROCESSING COMPLETED FOR L115  
 PROCESSING COMPLETED FOR L119  
 L121 35 DUP REM L120 L118 L113 L115 L119 (11 DUPLICATES REMOVED)  
     ANSWERS '1-7' FROM FILE CAPLUS  
     ANSWERS '8-10' FROM FILE AGRICOLA

ANSWERS '11-23' FROM FILE CABA  
 ANSWERS '24-29' FROM FILE BIOSIS  
 ANSWER '30' FROM FILE PASCAL  
 ANSWER '31' FROM FILE FSTA  
 ANSWER '32' FROM FILE WPIDS  
 ANSWERS '33-35' FROM FILE USPATFULL

=> d ibib ed ab hitrn 1-7; d iall 8-32; d ibib ab hitrn 33-35; fil hom

L121 ANSWER 1 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1  
 ACCESSION NUMBER: 2003:620819 CAPLUS  
 DOCUMENT NUMBER: 139:337404  
 TITLE: Digestion, milk production, milk composition, and blood composition of dairy cows fed formaldehyde treated flaxseed or sunflower seed  
 AUTHOR(S): Petit, H. V.  
 CORPORATE SOURCE: Dairy and Swine Research and Development Centre, Agriculture and Agri-Food Canada, Lennoxville, QC, J1M 1Z3, Can.  
 SOURCE: Journal of Dairy Science (2003), 86(8), 2637-2646  
 CODEN: JDSCAE; ISSN: 0022-0302  
 PUBLISHER: American Dairy Science Association  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

ED Entered STN: 13 Aug 2003

AB Mid-lactation Holstein dairy cows ( $n=40$ ;  $635.+-8$  kg) were allotted at wk 25 of lactation to 10 groups with similar calving dates to det. the effects of formaldehyde treatment of flaxseed and sunflower seed on fatty acid compn. of blood and milk, milk yield, feed intake, and apparent nutrient digestibility. Cows were fed total mixed diet based on grass silage and supplements for ad libitum intake over 10-wk period. Four isonitrogenous supplements based on untreated whole flaxseed, formaldehyde-treated whole flaxseed, untreated whole sunflower seed, or formaldehyde-treated whole sunflower seed were fed. Cows fed whole flaxseed vs. sunflower seed maintained greater dry matter (DM) intakes (20.3 vs. 18.9 kg/day). Intake of DM as % of body wt. was increased by adding formaldehyde to the oilseeds (3.24 vs. 2.98%). Milk prodn. was similar in cows fed flaxseed and sunflower seed. Formaldehyde treatment of flaxseed and sunflower seed increased milk prodn. on av. by 2.65 kg/day. Efficiency of fat-cor. milk yield kg/kg DM intake was increased by formaldehyde treatment (1.31 vs. 1.21), and it was greater with sunflower seed than with flaxseed (1.33 vs. 1.21). Protein concn. in milk was greater in cows fed flaxseed (3.38%) vs. sunflower seed (3.21%); formaldehyde had no effect. The apparent digestibility of DM was not affected by the type of seed, but it was greater in cows fed formaldehyde-treated seeds. Cows fed the formaldehyde-treated flaxseed had the greatest apparent digestibilities of acid detergent and neutral detergent fiber vs. the other diets. Apparent digestibilities of fatty acids were greater with sunflower seed vs. flaxseed-based diets. Thus, formaldehyde treatment had limited effects on milk fatty acid compn., suggesting that formaldehyde was not very effective in protecting polyunsatd. fatty acids against ruminal biohydrogenation. Feeding flaxseed resulted in the lowest n-6/n-3 fatty acid ratio. Both flaxseed and sunflower seed may be acceptable fat sources for mid-lactation dairy cows, with flaxseed increasing the milk protein % compared to sunflower seed.

IT 57-10-3, Hexadecanoic acid, biological studies 57-11-4,  
 Octadecanoic acid, biological studies 60-33-3,  
 9,12-Octadecadienoic acid (9Z,12Z)-, biological studies 112-80-1  
 , 9-Octadecenoic acid (9Z)-, biological studies 463-40-1  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)

(dietary formaldehyde-treated flaxseed or sunflower seed effects on nutrient digestibility, milk prodn., milk compn. and blood compn. in Holstein dairy cows)

IT 50-00-0, Formaldehyde, biological studies

RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)

(dietary formaldehyde-treated flaxseed or sunflower seed effects on nutrient digestibility, milk prodn., milk compn. and blood compn. in Holstein dairy cows)

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 2 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 1999:134264 CAPLUS

DOCUMENT NUMBER: 130:351599

TITLE: Effect of feeding formaldehyde- and heat-treated oil seed on milk yield and milk composition

AUTHOR(S): Tymchuk, S. M.; Khorasani, G. R.; Kennelly, J. J.

CORPORATE SOURCE: Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Can.

SOURCE: Canadian Journal of Animal Science (1998), 78(4), 693-700

CODEN: CNJNAT; ISSN: 0008-3984

PUBLISHER: Agricultural Institute of Canada

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 02 Mar 1999

AB The primary objective of this study was to det. the effect of formaldehyde-treated oil seed on milk compn., with particular emphasis on the fatty acid and protein compn. of milk. Ground and heat-treated canola seed treatments were included for comparison purposes. Four early-lactation Holstein cows were assigned to four treatments in a 4 times. 4 Latin square design. Cows were fed a control diet contg. 60% conc., 20% alfalfa silage and 20% barley silage (DM basis). The conc. portion was based on rolled barley, canola meal, and ground corn. Canola seed replaced barley and canola meal in the control diet at 5% on a DM basis. Dry matter intake (21.0 .+- .0.1 kg/d), milk yield (33.3 .+- .1.57 kg/d), milk component yield and milk protein and lactose percentages were not affected ( $P > 0.05$ ) by dietary treatment. Cows fed untreated ground canola seed had lower ( $P < 0.05$ ) milk fat percentage than cows fed the other treatments. The addn. of untreated and heat-treated canola seed reduced palmitic acid (15%) and increased oleic acid (14%), but had no effect on linoleic and linolenic acid concns. Formaldehyde treatment resulted in a 76 and 123% increase in C18:2 and C18:3, resp. over the control diet, whereas untreated and heat-treated canola seed did not influence the concn. of these fatty acids. Effects of treatments on milk protein and non-protein nitrogen components were minor or nonexistent. Transfer efficiencies calcd. for linoleic and linolenic acid indicated that formaldehyde treatment was efficacious in significantly reducing the extent of biohydrogenation of fatty acids in the rumen.

IT 50-00-0, Formaldehyde, biological studies

RL: AGR (Agricultural use); FFD (Food or feed use);

BIOL (Biological study); USES (Uses)

(effect of feeding formaldehyde- and heat-treated oil seed on milk yield and milk compn.)

IT 57-10-3, Palmitic acid, biological studies 112-80-1,

Oleic acid, biological studies

RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)

(effect of feeding formaldehyde- and heat-treated oil seed on milk yield and milk compn.)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 3 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6  
 ACCESSION NUMBER: 1976:149712 CAPLUS  
 DOCUMENT NUMBER: 84:149712  
 TITLE: Increasing polyunsaturation of milk fats by feeding formaldehyde protected sunflower-soybean supplement  
 AUTHOR(S): Wrenn, T. R.; Weyant, J. R.; Wood, D. L.; Bitman, J.; Rawlings, R. M.; Lyon, K. E.  
 CORPORATE SOURCE: Anim. Physiol. Genet. Inst., ARS, Beltsville, MD, USA  
 SOURCE: Journal of Dairy Science (1976), 59(4), 627-35  
 CODEN: JDSCAE; ISSN: 0022-0302  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

ED Entered STN: 12 May 1984

AB A practical means of protecting fats of a feed conc. cong. high polyunsatd. fatty acids is described. A ground mixt. of 30% soybeans and 70% sunflower seeds was treated with 1% formaldehyde to protect the unsatd. lipids from microbial hydrogenation in the rumen. This was fed as a supplement to two Holstein cows in amts. that were doubled weekly. These ranged from 524 to 8384 g/day and provided successively increasing intakes of 100, 200, 400, 800, and 1600 g of linoleic acid [ 60-33-3] daily. Milk fat increased by >1% (.apprx.2-fold increase), and linoleic acid (C18:2) of milk fat increased from 2.5 to 20% with compensatory declines in myristic (C14:0) and palmitic (C16:0) acids. Cholesterol and vitamin E of plasma both doubled at the highest supplementation. Milk yield, solids-not-fat, protein, and milk cholesterol were unaltered. Fat in feces doubled from about 3 to 6%. Daily linoleic acid content of feces increased from 25 g to 120 g, indicating a dietary loss of 7-10% of this polyunsatd. acid. These cheaper feed ingredients elevated the polyunsatd. fats in milk as effectively as purified casein and safflower oil supplements.

IT 50-00-0, biological studies

RL: BIOL (Biological study)  
 (feed treated with, milk fat compn. in response to)

IT 60-33-3, biological studies

RL: BIOL (Biological study)  
 (of milk fat, formaldehyde-treated feed effect on)

L121 ANSWER 4 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:539463 CAPLUS  
 DOCUMENT NUMBER: 137:78345  
 TITLE: Nutritional composition containing fatty acids for increasing milk production and milk protein in mammals  
 INVENTOR(S): Lanna, Dante Pazzanese Duarte; McGuire, Mark A.; Medeiros, Sergio Raposo; Estrasulas De Oliveira, Dimas; Aroeira, Luis Januario M.  
 PATENT ASSIGNEE(S): Fundacao De Amparo A Pesquisa Do Estado De Sao Paulo - FAPESP, Brazil  
 SOURCE: PCT Int. Appl., 29 pp.  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002054886	A1	20020718	WO 2002-BR3	20020109
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				

disappearance of N from dacron bags suspended in the rumen was reduced by either treatment. Factors were lupine treatment (untreated, heat- and formaldehyde-treated) and supplementation of **rumen protected** methionine (3 g methionine/day). The diet contained (/kg) 620 g chaffed oaten hay, 350 g broken lupines and 30 g mineral premix and was supplied once daily to sheep at a level of 900 g per day air dry or approx. 8 MJ per day ME. Comparative clean wool growth rate was detd. on mid-side patches of approx. 100 cm<sup>2</sup> shorn in 4 wk-intervals. Feces and urine were collected for 7 days at the end of the expt. with six sheep per treatment. Both body wt. gain and clean wool growth were not significantly effected by either treatment of lupines. Supplementation of **rumen protected** methionine significantly increased both body wt. gain (by 27%) and clean wool growth. The effect of supplementary **rumen protected** methionine on clean wool growth was twice as high in sheep fed either heat- or formaldehyde-treated lupines (37 and 36%, resp.) as compared to sheep fed untreated lupines (19%). Sulfur, but not nitrogen concn. in clean wool was significantly increased by supplementation of **rumen protected** methionine. The efficiency of utilization of metabolizable protein for N retention was improved by 13, 22 and 27% for diets contg. untreated, heat- and formaldehyde-treated lupines due to protected methionine supplementation. Org. matter digestibility and daily fecal N excretion were unaffected by lupine treatment and by supplementation of **rumen protected** methionine, indicating an equal ME supply to all sheep. Thus, treating lupines with formaldehyde or heat cannot be recommended as a means to improve the lupine protein quality for wool prodn. unless extra **rumen protected** methionine is supplemented.

IT 50-00-0, Formaldehyde, biological studies

RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses).  
(wool growth in Merino wethers fed lupines untreated or treated with heat or formaldehyde, with and without supplemented **rumen-protected** methionine)

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 6 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:513260 CAPLUS

DOCUMENT NUMBER: 125:220421

TITLE: Digestibility of rumen-undegraded crude protein of treated protein feeds in **postruminal** part of digestive tract of ruminants

AUTHOR(S): Sommer, A.; Ceresnakova, Z.; Szakacs, J.; Chrenkova, M.

CORPORATE SOURCE: Research Institute Animal Production, Nitra, 94992, Slovakia

SOURCE: Archives of Animal Nutrition (1995), 48(1-2), 173-181  
CODEN: AANUET

PUBLISHER: Harwood

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 27 Aug 1996

AB The effective degradability and intestinal digestibility of crude protein (CP) of untreated and formaldehyde (F) treated sunflower press-cakes (SF), lucerne meal (LM), and field beans (FB) were measured on polycannulated bulls by in sacco and mobile bag methods. The feeds were treated with F soln. in doses of 0.2-2.0 g F/100 g CP. The effective CP degradability after treatment was decreased for SF from 78 to 33, LM from 73 to 62, and FB from 70 to 47% with max. dose of F. The intestinal digestibility of FB treated with maximal dose of F was 20% lower in the duodenum content than in abomasum content. The digestibility in the cecum content for all tested feeds decreased with doses of F, similar as in the rumen. The

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,  
 RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG,  
 US, UZ, VN, YU, ZA, ZM, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 BR 2001000421 A 20020910 BR 2001-421 20010112  
 EP 1357805 A1 20031105 EP 2002-715323 20020109  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 PRIORITY APPLN. INFO.: BR 2001-421 A 20010112  
 WO 2002-BR3 W 20020109

ED Entered STN: 19 Jul 2002

AB A process to obtain increased milk prodn. and/or greater milk protein concn. is described using fatty acid supplements or through prodn. of specific fatty acids within the animal. The process or the supplementation of the product described in this invention (supplements formulated with fatty acid mixts. and with adequate levels of metabolizable protein) allows greater efficiency and/or better quality and/or a healthier mammal with improved productivity. The process includes supplementation of specific types of fatty acids with or without ruminal protection to ruminants and, generally, a diet with metabolizable protein energy ratio greater than that suggested by the state of the art. The process may include prodn. of the said compds. (conjugated fatty acids) in the animal itself from fat, certain compds. and added microorganisms capable of modifying the environment of the gut. The supplementation includes offering fatty acids capable of altering animal metab., as well as offering normal fatty acids which do not change metab. which, given some conditions in the rumen environment, can change their mol. structure and transform themselves into fatty acids capable of affecting tissue metab. (including increasing protein content and yield).

IT 50-00-0, Formaldehyde, biological studies 60-33-3D,  
 Linoleic acid, conjugated derivs. 2420-56-6 2540-56-9,  
 Rumenic acid

RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (fatty acid compn. for increasing milk prodn. and milk protein in mammals)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 5 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:760447 CAPLUS

DOCUMENT NUMBER: 132:347074

TITLE: Wool growth in Merino wethers fed lupins untreated or treated with heat or formaldehyde, with and without a supplementation of **rumen protected** methionine

AUTHOR(S): Rodehutscord, M.; Young, P.; Phillips, N.; White, C. L.

CORPORATE SOURCE: CSIRO Division of Animal Production, Australia

SOURCE: Animal Feed Science and Technology (1999), 82(3-4), 213-226

CODEN: AFSTDH; ISSN: 0377-8401

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 02 Dec 1999

AB Lupines were treated by either heat (115.degree.C for 1 h) or by formaldehyde (0.4 g/100 g crude protein). The fractional rate of

intestinal digestibility of undegraded CD residues of SF in the rumen increased from 43 to 82% as a result of the treatment. The effect of F on LM was very low, and the digestibility changed from 75 to 80%.

IT 50-00-0, Formaldehyde, biological studies

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)

(digestibility of in rumen-undegraded crude protein of treated protein feeds in **postruminal** part of digestive tract of ruminants)

L121 ANSWER 7 OF 35 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:219924 CAPLUS

DOCUMENT NUMBER: 102:219924

TITLE: Nitrogen utilization and ruminal fermentation in steers fed soybean meal treated with formaldehyde

AUTHOR(S): Spears, J. W.; Clark, J. H.; Hatfield, E. E.

CORPORATE SOURCE: Univ. Illinois, Urbana, IL, 61801, USA

SOURCE: Journal of Animal Science (Savoy, IL, United States) (1985), 60(4), 1072-80

CODEN: JANSAG; ISSN: 0021-8812

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 29 Jun 1985

AB Rumen-fistulated steers averaging 400 kg in body wt. were given exptl. diets contg. 42% corn silage, 48.5% cracked corn-mineral mixt., and 9.5% soybean meal (SBM) treated with 0, 0.3, 0.6, or 0.9% formaldehyde [50-00-0] by wt. Dry matter and org. matter digestibilities were not affected by treatment. Formaldehyde treatment of SBM resulted in a linear decrease in N digestibility and urinary N excretion and a quadratic increase in N retention. The depression in apparent N digestibility was small when SBM was treated with 0.3% formaldehyde. This level of formaldehyde treatment also had little effect on in vitro enzymic hydrolysis of SBM. Ruminal ammonia-N concns. were lower in steers fed formaldehyde-treated SBM. Ruminal pH was lower at 6 and 8 h postfeeding while volatile fatty acid concns. were higher at 8 and 12 h postfeeding for steers fed untreated SBM. Rumen propionic acid decreased linearly with increasing level of formaldehyde treatment. Urea-N concns. in plasma were decreased and plasma-free essential amino acid concns. were increased by formaldehyde treatment. Ruminal disappearance of N from polyester bags contg. the SBM supplements was greatly reduced by formaldehyde treatment. Results suggest that treatment of SBM with 0.3% formaldehyde will reduce ruminal degrdn. while having little effect on **postruminal** protein digestibility, resulting in an increased N utilization.

IT 50-00-0, biological studies

RL: AGR (Agricultural use); FFD (Food or feed use);

BIOL (Biological study); USES (Uses)

(rumen fermn. and nitrogen utilization by steers response to soybean meal treated with)

L121 ANSWER 8 OF 35 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN

DUPPLICATE 2

ACCESSION NUMBER: 2002:57038 AGRICOLA

DOCUMENT NUMBER: IND23285942

TITLE: Milk production and composition, ovarian function, and prostaglandin secretion of dairy cows fed omega-3 fats.

AUTHOR(S): Petit, H.V.; Dewhurst, R.J.; Scollan, N.D.; Proulx, J.G.; Khalid, M.; Haresign, W.; Twagiramungu, H.; Mann, G.E.

AVAILABILITY: DNAL (44.8 J822)

SOURCE: Journal of dairy science, Apr 2002. Vol. 85, No. 4. p. 889-899

Publisher: Savoy, Ill. : American Dairy Science Association.

CODEN: JDSCAE; ISSN: 0022-0302

NOTE: Includes references

PUB. COUNTRY: Illinois; United States

DOCUMENT TYPE: Article

FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension

LANGUAGE: English

**ABSTRACT:**

Four multiparous Holstein cows were used in a 4 x 4 Latin square experiment to study the effects of fat sources rich in omega-3 \*\*\*fatty\*\*\* acids on milk production and composition, follicular development, and prostaglandin secretion. All cows were fed a total mixed diet containing 60% grass silage and 40% concentrate. The four treatments were concentrates based either on Megalac, formaldehyde-treated whole linseed, a mixture (50:50, oil basis) of fish oil and \*\*\*formaldehyde\*\*\* -treated whole linseed, or no fat source in the concentrate but with 500 g per day of linseed oil being infused into the duodenum. Feed intakes and milk yield were similar among treatments. In general, the lowest digestibility was observed for the formaldehyde-treated whole linseed treatment. Feeding fish oil decreased milk fat and protein percentages. Alpha-linolenic acid increased from 1.0 to 13.9% of milk fatty acids with linseed oil infusion. This confirms the high potential to incorporate alpha-linolenic acid into milk, and suggests that the formaldehyde \*\*\*treatment\*\*\* had little effect to limit biohydrogenation in the rumen. Increasing the supply of alpha-linolenic acid to these cows did not result in an increase in the concentration of eicosapentaenoic acid in \*\*\*milk\*\*\*. Levels of 13,14-dihydro-15-keto-PGF(2alpha) in plasma were higher for cows receiving formaldehyde-treated linseed and fish oil. Increases in this metabolite in response to oxytocin challenge, tended to be lower for cows given linseed either as sole oil supplement in the diet or as a duodenal infusion of linseed oil. Follicle dynamics were similar among treatments. Larger corpora lutea (CL) were found with cows that received high levels of omega-3 \*\*\*fatty\*\*\* acids through the diet as formaldehyde-\*\*\*treated\*\*\* linseed or as a mixture of formaldehyde-\*\*\*treated\*\*\* linseed and fish oil, although CL were smaller when \*\*\*cows\*\*\* were infused with linseed oil into the duodenum. These results suggest that the improvement in gestation rate that was observed when feeding increased levels of alpha-linolenic acid in earlier work may partly result from lower levels of production of the dienoic prostaglandin PGF(2alpha).

CLASSIFICATION: L500 Animal Nutrition; L600 Animal Physiology and Biochemistry; L210 Animal Reproduction

CONTROLLED TERM (CABA): blood lipids; blood plasma; blood sugar; chemical composition; cholesterol; concentrates; corpus luteum; dairy cows; dietary fat; diets; duodenum; estrous cycle; fatty acids; feed intake; grass silage; high density lipoprotein; infusion; lactose; linseed; linseed oil; low density lipoprotein; milk fat percentage; milk fat yield; milk protein percentage; milk protein yield; milk yield; ovarian follicles; protected fat; synchronized females

SUPPLEMENTARY TERM: **formaldehyde-treated linseed**  
 CAS REGISTRY NO.: 50-56-6 (OXYTOCIN)  
 57-83-0 (LUTEUM)  
 57-88-5 (CHOLESTEROL)  
**463-40-1 (.ALPHA.-LINOLENIC ACID)**  
 8001-26-1 (LINSEED OIL)  
 66455-18-3 (LIPIDS)  
 67254-79-9 (FATTY ACIDS)  
 136602-70-5 (MEGALAC)  
**50-00-0Q, 9002-81-7Q (FORMALDEHYDE)**  
 63-42-3Q, 37383-89-4Q (LACTOSE)  
**10417-94-4Q, 25378-27-2Q, 32839-30-8Q**  
(EICOSAPENTAENOIC ACID)

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ACCESSION NUMBER: 2001:63733 AGRICOLA  
 DOCUMENT NUMBER: IND23222397  
 TITLE: **Milk** fatty acid composition and mammary lipid metabolism in Holstein **cows** fed protected or unprotected canola seeds.  
 AUTHOR(S): Delbecchi, L.; Ahnadi, C.E.; Kennelly, J.J.; Lacasse, P.  
 AVAILABILITY: DNAL (44.8 J822)  
 SOURCE: Journal of dairy science, June 2001. Vol. 84, No. 6.  
 p. 1375-1381  
 Publisher: Savoy, Ill. : American Dairy Science Association.  
 CODEN: JDSCAE; ISSN: 0022-0302  
 NOTE: Includes references  
 PUB. COUNTRY: Illinois; United States  
 DOCUMENT TYPE: Article  
 FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension  
 LANGUAGE: English  
 ABSTRACT:  
 Six midlactation Holstein **cows** were fed a total mixed ration supplemented with either 4.8% canola meal, 3.3% unprotected canola seeds plus 1.5% canola meal, or 4.8% **formaldehyde-protected** canola seeds, according to a double 3 x 3 Latin square design. Each period lasted 3 wk; experimental analyses were restricted to the last week of each period. Mammary biopsies were taken the last day of each period for gene expression measurements. **Milk** production and **milk** protein percentage were reduced by canola seeds, whether protected or unprotected. Protected canola seeds also decreased dry matter intake. Feeding canola seeds reduced the content of C8 to C16 fatty acids in **milk** and increased the content of oleic acid (C(18:1c9)). Unprotected canola seeds elevated the concentrations of C(18:0). Protected canola seeds increased the C(18:2) and C(18:3) content, and reduced the C(18:0)/C(18:1c9) ratio. Similar results were obtained for plasma fatty acids, with some specific features, such as an increased C(16:0)/C(16:1) ratio with protected canola seeds. Canola seeds had no significant effects on insulin, triglycerides, or cholesterol present in serum, but increased the concentration of nonesterified fatty acids; a greater increase was obtained with protected canola seeds. Expression levels of acetyl-CoA carboxylase and delta 9-stearoyl-CoA desaturase genes measured in the mammary gland did not differ significantly between diets. Therefore, the reduced C(18:0)/C(18:1c9) ratio observed in **milk** with protected canola seeds was not due to an enhanced expression of the delta-9 desaturase in the mammary gland.

CLASSIFICATION: L500 Animal Nutrition; L600 Animal Physiology and

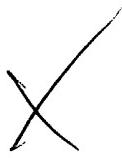
Biochemistry  
 CONTROLLED TERM (CABA): blood lipids; chemical composition; cholesterol; dairy cows; fatty acids; feed intake; feed rations; gene expression; insulin; lipid metabolism; mammary glands; milk fat; milk protein percentage; milk yield; oleic acid; rapeseed; rapeseed oilmeal; triacylglycerols  
 CAS REGISTRY NO.: 57-88-5 (CHOLESTEROL)  
 9004-10-8 (INSULIN)  
 9014-34-0 (STEAROYL-COA DESATURASE)  
 9023-93-2 (ACETYL COA CARBOXYLASE)  
 64706-27-0 (TRIGLYCERIDES)  
 66455-18-3 (LIPIDS)  
 67254-79-9 (FATTY ACIDS)  
 67254-79-9 (NONESTERIFIED FATTY ACIDS)  
 91053-68-8 (MILK PROTEIN)  
 103843-28-3 (DESATURASE)  
 121957-95-7 (CANOLA MEAL)  
 50-00-0Q, 9002-81-7Q (FORMALDEHYDE)  
 112-80-1Q, 28325-80-6Q (OLEIC ACID)

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ACCESSION NUMBER: 2002:39509 AGRICOLA  
 DOCUMENT NUMBER: IND23272886  
 TITLE: Transfer of omega-3 linolenic acid and linoleic acid to milk fat from flaxseed or Linola protected with formaldehyde.  
 AUTHOR(S): Goodridge, J.; Ingalls, J.R.; Crow, G.H.  
 AVAILABILITY: DNAL (41.8 C163)  
 SOURCE: Canadian journal of animal science, Dec 2001. Vol. 81, No. 4. p. 525-532  
 Publisher: Ottawa : Agricultural Institute of Canada, 1957  
 CODEN: CNJNAT; ISSN: 0008-3984  
 NOTE: Includes references  
 PUB. COUNTRY: Canada; Ontario  
 DOCUMENT TYPE: Article  
 FILE SEGMENT: Non-U.S. Imprint other than FAO  
 LANGUAGE: English  
 SUMMARY LANGUAGE: French  
 CLASSIFICATION: L500 Animal Nutrition; Q501 Food Composition, Dairy Products  
 CONTROLLED TERM (CABA): cattle feeding; dairy cows; flax; linoleic acid; linolenic acid; linum usitatissimum; milk composition; milk fat; milk yield  
 CAS REGISTRY NO.: 463-40-1 (LINOLENIC ACID)  
 50-00-0Q, 9002-81-7Q (FORMALDEHYDE)  
 60-33-3Q, 30175-49-6Q (LINOLEIC ACID)

L121 ANSWER 11 OF 35 CABA COPYRIGHT 2004 CABI on STN DUPLICATE 5

ACCESSION NUMBER: 77:23226 CABA  
 DOCUMENT NUMBER: 19770433725  
 TITLE: Milk and tissue lipid composition after feeding cows protected polyunsaturated fat for two years  
 AUTHOR: Wrenn, T. R.; Bitman, J.; Weyant, J. R.; Wood, D.



CORPORATE SOURCE: L.; Wiggers, K. D.; Edmondson, L. F.  
 Nutrient Utilization Lab., Anim. Physiol. & Genetics  
 Inst., USDA, Beltsville Agric. Res. Cent.,  
 Beltsville, Maryland 20705, USA.

SOURCE: Journal of Dairy Science, (1977) Vol. 60, No. 4, pp.  
 521-532. 49 ref.

ISSN: 0022-0302

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 19941101

Last Updated on STN: 19941101

*(Handwritten mark)*

ABSTRACT:  
 The long-term effects of feeding Holstein-Friesian cows plant lipids protected from microbial hydrogenation in the rumen were studied. Safflower oil-casein or safflower oil-casein treated with formaldehyde to impede microbial attack were fed to 2 groups of 3 cows as 10% of the concentrate ration for 2 lactations. Production of milk fat of cows fed the protected concentrate increased significantly. Linoleic acid of milk fat was twice normal, providing a polyunsaturated milk. Cholesterol of milk or meat did not increase even though cholesterol of blood plasma was higher in both groups fed safflower oil than in control cows. Cardiovascular systems showed no marked abnormalities and no differences that could be due to treatment. All \*\*\*cows\*\*\* maintained normal health and milk production throughout the experiment.

CLASSIFICATION: QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality; LL520 Animal Nutrition (Production Responses); LL110 Dairy Animals; QQ030 Meat Produce

SEQUENCE CODE: ZA; ZB; HE; CA; BE; NU; OD; ON; OU

BROADER TERM: Carthamus; Asteraceae; Asterales; dicotyledons; angiosperms; Spermatophyta; plants

CONTROLLED TERM: fats; feeds; safflower; fatty acids; milk fat; casein; formaldehyde; linoleic acid; composition; milk; feeding; fat; safflower oil

SUPPLEMENTARY TERM: protected; treated; protected fats; milk fat after formaldehyde-treated casein and safflower oil feeding; formaldehyde treatment

CAS REGISTRY NUMBER: 50-00-0; 60-33-3

ORGANISM NAME: Carthamus tinctorius

L121 ANSWER 12 OF 35 CABA COPYRIGHT 2004 CABI on STN DUPLICATE 7  
 ACCESSION NUMBER: 75:75034 CABA  
 DOCUMENT NUMBER: 19751439375

TITLE: Effects of feeding formaldehyde treated, full fat soybean flours on milk fat polyunsaturated fatty acids

AUTHOR: Bitman, J.; Wrenn, T. R.; Wood, D. L.; Mustakas, G. C.; Baker, E. C.; Wolf, W. J.

CORPORATE SOURCE: ARS, USDA, Biochemistry Lab., Beltsville, Md. 20705, USA.

SOURCE: Journal of the American Oil Chemists' Society, (1975) Vol. 52, No. 10, pp. 415-418.

ISSN: 0003-021X

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 19941101

Last Updated on STN: 19941101

ABSTRACT:

Raw full-fat flour prepared from Hawkeye soya beans; full-fat flour produced by dry heating of the soya beans for 6 to 10 min at 220 deg F followed by extrusion cooking of the heated beans adjusted to 20% moisture for 1.25 min at 275 deg , drying and pinmilling; and a commercial full-fat soya flour (Nutrisoy 220), were each suspended in 4 parts of water, wet milled and homogenized. Formaldehyde solution (37%) was added to each to give a final ratio of formaldehyde solution to protein 1:10 and after 20 min the mixtures were spray-dried. The physical structures of the preparations before and after \*\*\*formaldehyde\*\*\* treatment were examined by scanning electron microscopy. Three Holstein cows of 442 to 550 kg and 30 to 45 days in \*\*\*lactation\*\*\* were given standard hay and concentrate for 5 days, untreated soya for 2 days, hay and concentrate for 5 days, treated soya flour for 2 days and finally hay and concentrate for 5 days. The treated and untreated soya preparations were given at 1500 g daily in 2 portions as part replacement of the concentrate ration on a weight for weight basis. With all of the \*\*\*formaldehyde\*\*\* -protected preparations more than usual amounts of polyunsaturated fats were incorporated into the milk, the percentage of linoleic acid being more than doubled compared to the \*\*\*milk\*\*\* fat of cows on untreated soya. Only very small quantities of formaldehyde were found in the milk. The efficiency of transfer of C18:2 from feed to milk was about 37%.

CLASSIFICATION: LL520 Animal Nutrition (Production Responses); LL110 Dairy Animals; QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality; RR100 Forage and Feed Processing

SEQUENCE CODE: ZA; ZB; HE; CA; BE; NU; ON; OU; OD

BROADER TERM: Fabaceae; Fabales; dicotyledons; angiosperms; Spermatophyta; plants

CONTROLLED TERM: milk; soyabean; feeds; formaldehyde; fatty acids; milk fat; composition; milk composition; milk yield; feeding; fats; linoleic acid; polyunsaturated fatty acid content; formaldehyde treatment; treated; unsaturated; poly-; protected fats; protected

SUPPLEMENTARY TERM: 50-00-0; 60-33-3

CAS REGISTRY NUMBER: 50-00-0; 60-33-3

ORGANISM NAME: Glycine (Fabaceae)

L121 ANSWER 13 OF 35 CABA COPYRIGHT 2004 CABI on STN  
 ACCESSION NUMBER: 80:22783 CABA  
 DOCUMENT NUMBER: 19800459738  
 TITLE: Responses in linoleic acid content of milk fat from cows receiving different levels of protected sunflower seed supplement. II. Responses to low levels  
 AUTHOR: Pankhurst, I. M.; Mathews, G. L.; Robinson, I. B.; Fowler, P.  
 CORPORATE SOURCE: Dairy Res. Inst. (Ellinbank), Warragul, Victoria, Australia.  
 SOURCE: Australian Journal of Dairy Technology, (1980) Vol. 35, No. 1, pp. 11-13. 7 ref.  
 ISSN: 0004-9433

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101

ABSTRACT:  
 12 Friesian and Friesian X Jersey cows were given isoenergetic rations with a basal diet of 50:50 lucerne chaff:oats and a \*\*\*formaldehyde\*\*\* -treated sunflower seed supplement (lipid 38%,



protein 22%, DM basis) at 0, 0.25, 0.5 or 1 kg daily. There was a 21 day preliminary period followed by 7 days adjustment and 16 days measurement. Data were analysed by stepwise regression and equations calculated for the effect of supplement increase on yield parameters. Yield of **milk**, fat and protein were related linearly to supplement inclusion as was linoleic acid yield and % ( $R^2 = 90.2-95.4$ ), fat % was related quadratically to supplement inclusion and to initial fat %; the protein % was not affected by supplements. The equations predicted a 19% increase in **milk** yield for 1 kg supplement. Mean corrected linoleic acid content of **milk** fat was for the 4 diets 6.0, 9.6, 11.7 and 16.6% resp., the amount of linoleic acid in supplement lipid was 74%. [See DSA 39, 528 for part I.]

CLASSIFICATION: LL110 Dairy Animals; LL520 Animal Nutrition  
(Production Responses)  
SEQUENCE CODE: ZA; ZB; CA; BE; OD; ON  
BROADER TERM: female animals; animals; Helianthus; Asteraceae;  
Asterales; dicotyledons; angiosperms; Spermatophyta;  
plants; Bos; Bovidae; **ruminants**;  
Artiodactyla; mammals; vertebrates; Chordata;  
ungulates  
CONTROLLED TERM: linoleic acid; composition; **milk** fat;  
feeding; feeds; sunflowers; seeds; formaldehyde;  
**cattle** feeding; fat; **cows**  
SUPPLEMENTARY TERM: protected; treated; protected sunflower seed  
supplement; sunflower seed; **formaldehyde**  
**treatment**  
CAS REGISTRY NUMBER: 60-33-3; 50-00-0  
ORGANISM NAME: Helianthus annuus; **cattle**

L121 ANSWER 14 OF 35 CABA COPYRIGHT 2004 CABI on STN  
ACCESSION NUMBER: 80:22782 CABA  
DOCUMENT NUMBER: 19800459737  
TITLE: The effects of feeding dairy **cows**  
**formaldehyde** **protected**  
decorticated sunflower seed supplement with and  
without added soybean meal  
AUTHOR: Pankhurst, I. M.; Robinson, I. B.; Mathews, G. L.;  
Quinton, D. E.; Roberts, D. J.  
CORPORATE SOURCE: Dairy Res. Inst. (Ellinbank), Warragul, Victoria,  
Australia.  
SOURCE: Australian Journal of Dairy Technology, (1980) Vol.  
35, No. 1, pp. 9-11. 5 ref.  
ISSN: 0004-9433  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ENTRY DATE: Entered STN: 19941101  
Last Updated on STN: 19941101

ABSTRACT:  
In a 3 X 3 switch back trial 8 Holstein-Friesians and 1 Jersey **cow**  
were given, at 2 kg daily, **formaldehyde-treated** supplements  
(lipid 38-42%) with whole sunflower seed 90% and casein 10%, or decorticated  
sunflower seed 90% and casein 10%, or with decorticated sunflower seed 82.5%,  
soya bean oilmeal 15% and casein 2.5%. Basal diet was 50:50 lucerne  
chaff:crushed oats and the periods consisted of 7 days adjustment, 8 days  
measurement. There was no significant difference between treatments with  
respect to av. daily **milk** yield, 16.2, 16.5 and 16.4 kg, **milk**  
fat, 4.40, 4.36 and 4.49%, fat yield, 0.70, 0.71, 0.74 kg, protein content  
3.43-3.45%, protein yield, or content of linoleic acid in **milk** fat,  
23.6, 25.2, 25.3%, resp. In a 2nd trial of the same design, 9 Jersey  
\*\*\*cows\*\*\* were grazed and given daily 1 kg of the basal diet and 2.5 kg of  
the decorticated sunflower seed supplement, sunflower-soya bean supplement or

oats. Av. daily **milk** yield on the 3 diets was 10.4, 10.9 and 11.6 kg with fat 6.13, 5.86 and 5.29%, and linoleic acid in **milk** fat 25.2, 23.8, 4.5%, resp. The protected supplements slightly decreased **milk** yield but increased fat % and slightly increased fat yield. [See also following abstr.]

CLASSIFICATION: LL110 Dairy Animals; LL520 Animal Nutrition  
(Production Responses)  
SEQUENCE CODE: ZA; ZB; CA; BE; OD; ON  
BROADER TERM: female animals; animals; Helianthus; Asteraceae;  
Asterales; dicotyledons; angiosperms; Spermatophyta;  
plants; Fabaceae; Fabales; Bos; Bovidae;  
**ruminants**; Artiodactyla; mammals;  
vertebrates; Chordata; ungulates  
CONTROLLED TERM: feeds; sunflowers; seeds; **milk** yield;  
composition; fatty acids; **milk** fat yield;  
feeding; linoleic acid; **milk** fat;  
**milk** proteins; **milk**; yields;  
formaldehyde; soyabeans; meal; **cattle**  
feeding; soyabean oilmeal; fat; **cows**  
protected; or minus soya bean; treated; sunflower  
seed; **formaldehyde treatment**  
SUPPLEMENTARY TERM:  
CAS REGISTRY NUMBER: 60-33-3; 50-00-0  
ORGANISM NAME: Helianthus annuus; Glycine (Fabaceae);  
**cattle**

L121 ANSWER 15 OF 35 CABA COPYRIGHT 2004 CABI on STN  
ACCESSION NUMBER: 82:15572 CABA  
DOCUMENT NUMBER: 19790450007  
TITLE: Protection of fats and oils against hydrogenation in  
the rumen by encapsulation in **formaldehyde**  
**-treated** protein  
Schutz von Fetten und Olen vor der Hydrogenierung in  
den Vormagen durch Umhullung mit formalinbehandeltem  
Protein  
AUTHOR: Hagemeister, H.; Kaufmann, W.  
CORPORATE SOURCE: Bundesanstalt fur Milchforschung, Kiel, German  
Federal Republic.  
SOURCE: Kieler Milchwirtschaftliche Forschungsberichte,  
(1979) Vol. 31, No. 1, pp. 53-72. 75 ref.  
ISSN: 0023-1347  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
SUMMARY LANGUAGE: English; French  
ENTRY DATE: Entered STN: 19941101  
Last Updated on STN: 19941101

ABSTRACT:  
Rumen-fistulated **lactating cows** with duodenal shunts  
received rations of groundnut or soya bean meal untreated or protected by  
repeated spraying with 40% formalin, or alternatively soya bean oil as such or  
mixed with finely ground soya beans and encapsulated by formalin treatment.  
Data are presented on hydrogenation in the rumen of linoleic acid, total  
unsaturated fatty acids and protected and unprotected oils; and on their  
digestibilities in the intestine. Linoleic acid contents in **milk** fat  
were constant at 1-2% in daily **milk** fat yield of 200-1000g/  
\*\*\*cow\*\*\* when unprotected feeds were given, and were approx. 8% at a  
\*\*\*milk\*\*\* fat yield of 200g and 3-4% at yields of 500-600 g when sprayed  
soya bean meal was given. Data on passage of linoleic acid into **milk**  
calculated from differences in contents between duodenum and faeces are  
presented and findings are extensively discussed.

CLASSIFICATION: LL600 Animal Physiology and Biochemistry (Excluding Nutrition)  
 SEQUENCE CODE: ZA; CA; BE; OD  
 BROADER TERM: Arachis; Fabaceae; Fabales; dicotyledons; angiosperms; Spermatophyta; plants  
 CONTROLLED TERM: fats; feeds; soyabean; linoleic acid; composition; milk fat; feeding; meal; formaldehyde; groundnuts  
 SUPPLEMENTARY TERM: protected; treated  
 CAS REGISTRY NUMBER: 60-33-3; 50-00-0  
 ORGANISM NAME: Arachis hypogaea; Glycine (Fabaceae); cattle

L121 ANSWER 16 OF 35 CABA COPYRIGHT 2004 CABI on STN  
 ACCESSION NUMBER: 77:23498 CABA  
 DOCUMENT NUMBER: 19770435320  
 TITLE: Dairy research report 1976, No. 4  
 CORPORATE SOURCE: Australia, Department of Agriculture & Fisheries, South Australia  
 SOURCE: Dairy research report 1976, No. 4, (1976) pp. 22.  
 Adelaide  
 PUB. COUNTRY: Australia  
 DOCUMENT TYPE: Report; Company Publication  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101

ABSTRACT:  
 Brief reports of current research at the Northfield Research Centre include the following: Dairy Husbandry Research: feeding mouldy hay to dairy cows; milk production from cows fed formaldehyde and formic acid treated silages; hay or grain supplements for milking \*\*\*cows\*\*\* grazing green oats; protected oil-seed supplements for milking \*\*\*cows\*\*\* ; varying the hay:concentrate ratio of milking cow rations; molasses or cereal grain supplements for milking cows fed hay; herd recording - (a) alternate a.m.-p.m. sampling and (b) computer system. \*\*\*Milk\*\*\* Chemistry Research: genetic typing of bovine milk proteins; effect of genetic variants of milk proteins on yield and composition of cows' milk; effect of milk protein genetic variants on curd firmness of milk; seasonal changes in total protein of herd milk; induction of lactogenesis in bull calves; effects of heat stress on milk composition; milk composition studies. [Continued in following abstr.]

CLASSIFICATION: AA500 Research; LL110 Dairy Animals; RR000 Forage and Feed Products (Non-human); QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality; LL520 Animal Nutrition (Production Responses)  
 SEQUENCE CODE: ZA; ZB; CA; BE; EC; OD; ON  
 GEOGRAPHIC TERM: Australia  
 BROADER TERM: mammals; vertebrates; Chordata; animals; young animals; Hordeum; Poaceae; Cyperales; monocotyledons; angiosperms; Spermatophyta; plants; Helianthus; Asteraceae; Asterales; dicotyledons; Australasia; Oceania  
 CONTROLLED TERM: dairy research; hay; feeds; milk yield; feeding; silage; formaldehyde; barley; composition; milk composition; fats; sunflowers; fatty acids; milk fat; milk proteins; linoleic acid; milk; oxidation; coagulation; rennet; concentrates; molasses; milk recording; genetic variation; curd; tension; lactation; initiation; calves;

SUPPLEMENTARY TERM: environment; stress  
 Northfield Res. Centre; Northfield; Res. Centre;  
 mouldy; treated; formic acid preserved; preserved;  
 green oats; protected; protected fats; level;  
 alternate a.m.-p.m. sampling; computerization; hot  
**50-00-0; 60-33-3**  
 CAS REGISTRY NUMBER:  
 ORGANISM NAME: *Hordeum vulgare; Helianthus annuus*

L121 ANSWER 17 OF 35 CABA COPYRIGHT 2004 CABI on STN  
 ACCESSION NUMBER: 77:76521 CABA  
 DOCUMENT NUMBER: 19771453280  
 TITLE: Studies on feeding encapsulated safflower oil to  
 milking **cows** and fattening steers  
 AUTHOR: Abe, M.; Yamamoto, Y.; Uehara, R.; Ogiwara, K.;  
 Satoh, T.  
 CORPORATE SOURCE: Lab. Nippon Formula Feed Manufacturing Co.,  
 Yokohama-shi 230, Japan.  
 SOURCE: Japanese Journal of Zootechnical Science, (1976)  
 Vol. 47, No. 11, pp. 639-647. 28 ref.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese  
 SUMMARY LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101

ABSTRACT:  
 For 3 Holstein **cows** with daily **milk** yield about 15 kg the daily ration was timothy hay 4, beet pulp 8 and concentrate 5 to 6 kg. Of 6 consecutive periods of 5 days the first was for standardization, and subsequently the **cows** got 150, 300 or 600 g safflower oil encapsulated in **formaldehyde-treated** casein, with periods without the oil interspersed. Fatty acids in **milk** and plasma were estimated on the last day of each period. The safflower oil tended to increase linoleic acid in plasma lipids and blood sugar. Without oil there was little linoleic acid in **milk**, but it increased to 21.6% of fatty acids when 600 g oil was given. Safflower oil also increased yield and fat content of \*\*\*milk\*\*\*. For 3 bullocks of 550 kg given concentrates and rice straw to appetite, the protected safflower oil was mixed with concentrate at 10 g/kg for 37 days before slaughter; 3 similar bullocks got no oil. The oil gave significantly more linoleic acid in plasma, but there was little effect on fatty acid composition of carcass fat. Stearic acid was twice as much in kidney fat and visceral fat as in subcutaneous or intramuscular fat. Linoleic acid was twice as much in intramuscular lipids as in the other fatty tissues. The oil did not affect gain, feed conversion or carcass quality of the bullocks. (From summary.)

CLASSIFICATION: LL520 Animal Nutrition (Production Responses); LL110  
 Dairy Animals  
 SEQUENCE CODE: ZA; ZB; CA; BE; ON; OD  
 BROADER TERM: Carthamus; Asteraceae; Asterales; dicotyledons;  
 angiosperms; Spermatophyta; plants  
 CONTROLLED TERM: **milk** yield; fats; feeds; safflower; fatty  
 acids; **milk** fat; feeding; composition;  
**milk**; casein; formaldehyde; linoleic acid  
**cattle** carcass composition; safflower oil  
 supplement; **formaldehyde treatment**  
 ; protected; treated; protected fats  
 SUPPLEMENTARY TERM: **50-00-0; 60-33-3**  
 CAS REGISTRY NUMBER:  
 ORGANISM NAME: *Carthamus tinctorius*

L121 ANSWER 18 OF 35 CABA COPYRIGHT 2004 CABI on STN  
 ACCESSION NUMBER: 76:76769 CABA

DOCUMENT NUMBER: 19761444653  
 TITLE: Effect of feeding protected safflower oil on yield,  
 composition, flavor, and oxidative stability of  
**milk**  
 AUTHOR: Goering, H. K.; Gordon, C. H.; Wrenn, T. R.; Bitman,  
 J.; King, R. L.; Douglas, F. W., Jr.  
 CORPORATE SOURCE: ARS, Nutrition Inst., Ruminant Nutrition Lab.,  
 Beltsville, MD 20705, USA.  
 SOURCE: Journal of Dairy Science, (1976) Vol. 59, No. 3, pp.  
 416-425. 34 ref.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101

ABSTRACT:  
 For 16 weeks 4 pairs of Holstein **cows** were given a normal ration of lucerne and cocksfoot hay and concentrate to meet maintenance and production, or a similar diet in which 800 g safflower oil:casein:formaldehyde replaced an equal weight of concentrate. **Cows** were in their first to fourth \*\*\*lactation\*\*\* and 60 to 170 days post partum. The protected safflower oil compound contained oil 68.5, crude protein 28.5, water 0.5 and formaldehyde 0.5%. After 2 months all **cows** were given alpha -tocopheryl acetate 5 g/day for 7 days. Vitamin E was also added directly to freshly drawn \*\*\*milk\*\*\* to control oxidized flavour. Digestible energy intakes were estimated to be 7% above needs for control **cows** and 9% above for test \*\*\*cows\*\*\*. Yields of **milk**, butterfat, protein and solids-not-fat all tended to be greater in **cows** given protected safflower oil, but differences were not significant. Daily production of C18:2 was increased and of C16:1, C14:1 and shorter-chain fatty acids decreased when the protected safflower oil was given. There was 29% C18 acids in **milk** from normally fed **cows** and 59% in that of test **cows**, with correspondingly less short-chain acids. Recovery in **milk** of dietary linoleic acid was estimated at 7% for controls and 15 to 22% for test \*\*\*cows\*\*\*. Plasma fatty acids showed similar trends to **milk** fats, and cholesterol was higher in **cows** given the safflower oil. Tailhead fat biopsy of those **cows** also showed more linoleic acid. Oxidized flavour developed in response to Cu and spontaneously in **milk** from test **cows**. Use of alpha -tocopherol increased vitamin E in polyunsaturated **milk** by 200%, compared with 50% in normally fed \*\*\*cows\*\*\*, but controlled only spontaneous, not Cu-induced off-flavours. Direct addition of alpha -tocopherol to **milk** prevented both.

CLASSIFICATION: LL520 Animal Nutrition (Production Responses); LL110 Dairy Animals; QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality  
 SEQUENCE CODE: ZA; ZB; HE; CA; BE; NU; ON; OU; OD  
 BROADER TERM: female animals; animals; Carthamus; Asteraceae; Asterales; dicotyledons; angiosperms; Spermatophyta; plants; Bos; Bovidae; **ruminants**; Artiodactyla; mammals; vertebrates; Chordata; ungulates  
 CONTROLLED TERM: **cattle** feeding; safflower oil; **milk** yield; **milk** composition; **milk** flavour; fats; feeds; safflower; fatty acids; **milk** fat; oxidation; linoleic acid; composition; tocopherols; **milk**; feeding; formaldehyde; **cows**  
 SUPPLEMENTARY TERM: **formaldehyde treatment**; protected safflower oil; protected; protected fats; or minus tocopherols; added; treated

CAS REGISTRY NUMBER: 60-33-3; 50-00-0  
 ORGANISM NAME: *Carthamus tinctorius; cattle*

L121 ANSWER 19 OF 35 CABA COPYRIGHT 2004 CABI on STN  
 ACCESSION NUMBER: 76:77312 CABA  
 DOCUMENT NUMBER: 19761449629  
 TITLE: Responses in linoleic acid content of milkfat from cows receiving different levels of protected sunflower seed supplement  
 AUTHOR: Earle, D. F.; Pankhurst, I. M.; Mathews, G. L.;  
 Fowler, P.; Robinson, I. B.  
 CORPORATE SOURCE: School of Agriculture, Latrobe Univ., Bundoora, Victoria, Australia.  
 SOURCE: Australian Journal of Dairy Technology, (1976) Vol. 31, No. 2, pp. 48-51.  
 ISSN: 0004-9433  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101

**ABSTRACT:**  
 Part of a basal diet of lucerne chaff and crushed oats (1:1 w/w) for 12 dairy \*\*\*cows\*\*\* was isocalorically replaced by formaldehyde- \*\*\*treated\*\*\* whole sunflower seed supplement (FT-SS) at 0.75, 1.5, 2.0, 2.5 and 3.5 kg/day. Cows given 3.5 kg/day periodically scoured and refused feed and hence results from these animals were not included in regression analyses. The relationship between the amount of FT-SS (S kg/day) and the percentage linoleic acid (LC) of the fatty acids of milk fat increased according to the equation: LC = -0.05 + 13.1 S - 1.87 S<sup>2</sup> + 1.9 ILC, where ILC was the initial percentage of linoleic acid. The daily fat yield increased linearly with the amount of FT-SS given and cows which produced 0.56 kg of fat/day without supplement should produce 0.83 kg/day with 2.5 kg of FT-SS. Milk yield and protein yield were not significantly related to the amount of FT-SS. In cows given FT-SS 2.0 kg/day, mean linoleic acid content of the total milk fatty acids was 19.1% with a standard deviation of 2.0%. It was apparent that different batches of FT-SS can result in different responses in linoleic acid content of fatty acids of \*\*\*milk\*\*\* fat.

CLASSIFICATION: LL520 Animal Nutrition (Production Responses); LL110 Dairy Animals; QQ500 Food Composition and Quality; QQ010 Milk and Dairy Produce; RR300 Feed Composition and Quality

SEQUENCE CODE: ZA; ZB; HE; CA; BE; NU; ON; OU; OD  
 BROADER TERM: female animals; animals; *Helianthus*; Asteraceae; Asterales; dicotyledons; angiosperms; Spermatophyta; plants; *Bos*; Bovidae; ruminants; Artiodactyla; mammals; vertebrates; Chordata; ungulates

CONTROLLED TERM: milk fat; cattle feeding; fats; feeds; sunflowers; fatty acids; composition; feeding; formaldehyde; linoleic acid; cows linoleic acid content; formaldehyde treated sunflower seed supplement; sunflower seed supplement; formaldehyde treatment; linoleic acid in milk fat; formaldehyde treated; protected; treated; sunflower seed; protected fats 50-00-0; 60-33-3

CAS REGISTRY NUMBER: 50-00-0; 60-33-3  
 ORGANISM NAME: *Helianthus annuus; cattle*

L121 ANSWER 20 OF 35 CABA COPYRIGHT 2004 CABI on STN

ACCESSION NUMBER: 75:74330 CABA  
DOCUMENT NUMBER: 19751431316

TITLE: Is it possible to change profoundly the fat content and the fatty acid composition of cows' milk by nutrition?

AUTHOR: Aerts, J. V.; Brabander, D. L. De; Cottyn, B. G.; Martens, R.; Huyghebaert, A.; Buysse, F. X.

CORPORATE SOURCE: National Inst. Animal Nutrition, Scheldeweg 12, 9231 Gontrode, Belgium.

SOURCE: Zeitschrift fur Tierphysiologie Tierernahrung und Futtermittelkunde, (1975) Vol. 34, No. 6, pp. 310-324.

DOCUMENT TYPE: Journal

LANGUAGE: English

SUMMARY LANGUAGE: German

ENTRY DATE: Entered STN: 19941101  
Last Updated on STN: 19941101

ABSTRACT:

Seven trials were with cows with daily milk yields between 10 and 23 litres. In the first 3 trials, preliminary, experimental and recovery periods were 6, 12 and 6 days and in the others they were 14, 21 and 14 days. During experimental periods cows were given 2 kg safflower oil or lard protected with casein and formaldehyde, 0.8 to 1.6 kg lard protected with gelatin and formaldehyde, or 2 kg groundnuts milled through a 5-mm screen and treated with \*\*\*formaldehyde\*\*\*. The protected feeds replaced concentrate.

Preparation of the protected lipids is described. The protected safflower oil increased yield and fat content of milk and in milk fat it reduced short- and medium-chain fatty acids and increased C18 acids, particularly linoleic. Lard protected with casein and \*\*\*formaldehyde\*\*\* increased yield and fat content of milk and C18:0 and C18:1 acids in milk fat. The relatively cheaper lard \*\*\*protected\*\*\* with gelatin and formaldehyde also increased \*\*\*milk\*\*\* yield and fat content. The effect on fatty acids is not reported. \*\*\*Formaldehyde\*\*\* treatment of groundnuts milled through 1- or 2-mm screen effectively reduced digestibility of organic matter in vitro during 48 h. The coarser meal used in the feeding trials increased yield of \*\*\*milk\*\*\* and butterfat, but slightly reduced fat content of milk.

CLASSIFICATION: LL110 Dairy Animals; LL520 Animal Nutrition (Production Responses); QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality; RR300 Feed Composition and Quality

SEQUENCE CODE: ZA; ZB; ON; OU; CA; BE; NU; 1N; 0D

BROADER TERM: female animals; animals; Arachis; Fabaceae; Fabales; dicotyledons; angiosperms; Spermatophyta; plants; Carthamus; Asteraceae; Asterales; Bos; Bovidae; ruminants; Artiodactyla; mammals; vertebrates; Chordata; ungulates

CONTROLLED TERM: milk; cows; fat; fatty acids; feeds; lipids; feeding; gelatin; groundnuts; casein; formaldehyde; milk fat; composition; fats; linoleic acid; safflower; milk fat yield

SUPPLEMENTARY TERM: protected; fat and fatty acids in milk; protected lipids; treated; protected fats 9000-70-8; 50-00-0; 60-33-3

CAS REGISTRY NUMBER: 9000-70-8; 50-00-0; 60-33-3  
ORGANISM NAME: Arachis hypogaea; Carthamus tinctorius; cattle

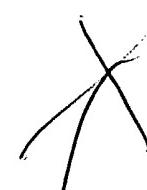
L121 ANSWER 21 OF 35 CABA COPYRIGHT 2004 CABI on STN

ACCESSION NUMBER: 75:19794 CABA  
 DOCUMENT NUMBER: 19750416344  
 TITLE: Autoxidation in milk rich in linoleic acid. I. An objective method for measuring autoxidation and evaluating antioxidants  
 AUTHOR: Sidhu, G. S.; Brown, M. A.; Johnson, A. R.  
 CORPORATE SOURCE: Food Res. Lab., Div. of Food Res., CSIRO, Sydney, NSW 2113, Australia.  
 SOURCE: Journal of Dairy Research, (1975) Vol. 42, No. 1, pp. 185-195. 32 ref.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101

**ABSTRACT:**  
 Autoxidation was studied in milk from cows fed on \*\*\*formaldehyde\*\*\* -treated casein/safflower oil supplement. A rapid disappearance of dissolved oxygen (DO), measured with an oxygen electrode, from \*\*\*milk\*\*\* samples stored at 0 deg C in tubes without headspace, coincided with the development of oxidized flavours detected organoleptically. A correlation coeff. of 0.9 ( $P < 0.001$ ) was obtained between the amount of DO disappearing and the taste panel scorers for oxidized flavours. Butylated hydroxyanisole (BHA), sesamol, nordihydroguaiaretic acid, ethoxyquin, or BHA + propylgallate or tocopherols, when added in emulsified form to the \*\*\*milk\*\*\* at the rate of 10-15 mg/l. milk, checked the development of oxidized flavours and the rapid disappearance of DO. Other antioxidants tested were either ineffective or imparted off-flavours to milk. Samples of mare's milk neither developed oxidized flavours nor showed rapid disappearance of DO over a test period of 8 days, despite containing 20% linoleic acid in the fat. The oxygen electrode provides a convenient and sensitive method for studying autoxidation in milk.

CLASSIFICATION: QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality  
 SEQUENCE CODE: ZA; ZB; OU; CA; BE; EC; OD  
 BROADER TERM: horses; Equus; Equidae; Perissodactyla; ungulates; mammals; vertebrates; Chordata; animals; female animals  
 CONTROLLED TERM: oxidation; milk; linoleic acid; composition; tocopherols; antioxidants; mares added  
 SUPPLEMENTARY TERM:  
 CAS REGISTRY NUMBER: 60-33-3  
 ORGANISM NAME: horses

L121 ANSWER 22 OF 35 CABA COPYRIGHT 2004 CABI on STN  
 ACCESSION NUMBER: 73:37580 CABA  
 DOCUMENT NUMBER: 19730407101  
 TITLE: Cheddar cheese with increased polyunsaturated fatty acids  
 AUTHOR: Wong, N. P.; Walter, H. E.; Vestal, J. H.; Lacroix, D. E.; Alford, J. A.  
 CORPORATE SOURCE: USDA, Nutr. Inst., Beltsville, Maryland 20705, USA.  
 SOURCE: Journal of Dairy Science, (1973) Vol. 56, No. 10, pp. 1271-1275. 9 ref.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 19941101  
 Last Updated on STN: 19941101  
**ABSTRACT:**



Cheddar **cheese** was made from normal **milk** and from \*\*\*milk\*\*\* of **cows** fed a standard hay/concentrate ration supplemented with 800 g **formaldehyde-treated** safflower oil-casein particles. During manufacture, **cheese** containing more than or equal to 12% linoleic acid differed from control **cheese** in the following respects: storage of the **milk** for more than or equal to 3 days was more deleterious to **cheese** quality; the curd had an oily taste; there was more oiling off in the **cheese** vat; bleaching of the annatto **cheese** colouring occurred; and the **cheese** fat contained more long-chain fatty acids, particularly C18:2 (13.59 vs. 2.77% on a wt. basis), C18:1 (33.02 vs. 28.39%) and C18:0 (16.27 vs. 13.26%). Flavour score was approx. 1 point lower than controls for **cheeses** containing 8-18% linoleic acid and 6 points lower for **cheeses** containing >30%. Processed **cheese** prepared by blending normal **cheese** with that containing various % of polyunsaturated fatty acids to give a linoleic acid content of 10-12% was as acceptable as commercial processed **cheese**

CLASSIFICATION: QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality; LL110 Dairy Animals; LL520 Animal Nutrition (Production Responses); RR300 Feed Composition and Quality

SEQUENCE CODE: ZA; ZB; ON; OU; CA; BE; OD; 1N

BROADER TERM: female animals; animals; Carthamus; Asteraceae; Asterales; dicotyledons; angiosperms; Spermatophyta; plants; Bos; Bovidae; **ruminants**; Artiodactyla; mammals; vertebrates; Chordata; ungulates

CONTROLLED TERM: **cheeses**; Cheddar **cheese**; fatty acids; cheesemaking; **milk**; quality; **milk** fat; feeds; linoleic acid; composition; fats; safflower; casein; formaldehyde; safflower oil; **cows**; oils; acceptability

SUPPLEMENTARY TERM: polyunsaturated; Cheddar; unsaturated; poly-; protected fats; protected; treated; **formaldehyde treated** casein and safflower oil; **formaldehyde treated** polyunsaturated fatty acids in **milk**; **formaldehyde treated** feed for **cows**

CAS REGISTRY NUMBER: 60-33-3; 50-00-0

ORGANISM NAME: Carthamus tinctorius; cattle

L121 ANSWER 23 OF 35 CABA COPYRIGHT 2004 CABI on STN

ACCESSION NUMBER: 74:19542 CABA

DOCUMENT NUMBER: 19740409864

TITLE: The effect of feeding **formaldehyde treated** sunflower seed supplement on the yield and composition of milkfat

AUTHOR: Chandler, N. J.; Robinson, I. B.; Ripper, I. C.; Fowler, P.

CORPORATE SOURCE: Ellinbank Dairy Res. Sta., Warragul, Victoria.

SOURCE: Australian Journal of Dairy Technology, (1973) Vol. 28, No. 4, pp. 179. 4 ref.

ISSN: 0004-9433

DOCUMENT TYPE: Journal

LANGUAGE: English

ENTRY DATE: Entered STN: 19941101

Last Updated on STN: 19941101

ABSTRACT:

After a 15-day standardization period during which lucerne chaff/crushed oats

(1:1 w/w) was fed ad lib., 7 control cows continued on the same diet for 72 days whilst 7 experimental cows were fed control diet plus \*\*\*formaldehyde\*\*\* -treated sunflower seed (FT-SS) supplement (2:1 w/w); the FT-SS was substituted on the basis of estimated metabolizable energy. Mean daily intake of FT-SS was 2.7 plus or minus 0.3 kg. Cows on experimental and control diets respectively had a mean daily milk fat yield of 701 and 460 g ( $P < 0.001$ ) and fat % of 6.29 and 3.82% ( $P < 0.001$ ). The FT-SS diet caused significant decreases in the proportions of capric ( $P < 0.05$ ), lauric ( $P < 0.01$ ), myristic ( $P < 0.001$ ), palmitic ( $P < 0.001$ ) and oleic ( $P < 0.01$ ) acid in milk fat and increases in the proportions of stearic ( $P < 0.01$ ) and linoleic ( $P < 0.001$ ) acids; the linoleic acid increased 20-fold, to 25.6%.

CLASSIFICATION: QQ010 Milk and Dairy Produce; QQ500 Food Composition and Quality; LL110 Dairy Animals; LL520 Animal Nutrition (Production Responses); RR300 Feed Composition and Quality

SEQUENCE CODE: ZA; ZB; ON; OU; CA; BE; OD; IN

BROADER TERM: female animals; animals; Helianthus; Asteraceae; Asterales; dicotyledons; angiosperms; Spermatophyta; plants; Bos; Bovidae; ruminants; Artiodactyla; mammals; vertebrates; Chordata; ungulates

CONTROLLED TERM: fatty acids; composition; milk fat; feeding; fats; linoleic acid; milk yield; milk fat yield; milk; feeds; sunflowers; formaldehyde; cows; treatment; sunflower oilmeal; meal protected; treated; sunflower seed; formaldehyde-treated sunflower meal; milk fat composition; formaldehyde-treated

SUPPLEMENTARY TERM: 60-33-3; 50-00-0

CAS REGISTRY NUMBER: 60-33-3; 50-00-0

ORGANISM NAME: Helianthus annuus; cattle

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STN DUPLICATE 4

ACCESSION NUMBER: 1977:207996 BIOSIS  
DOCUMENT NUMBER: PREV197764030360; BA64:30360  
TITLE: FEEDING POLY UNSATURATED VEGETABLE OILS TO LACTATING COWS.  
AUTHOR(S): GOERING H K; WRENN T R; EDMONDSON L F; WEYANT J R; WOOD D L; BITMAN J  
SOURCE: Journal of Dairy Science, (1977) Vol. 60, No. 5, pp. 739-747.  
CODEN: JDSCAE. ISSN: 0022-0302.

DOCUMENT TYPE: Article  
FILE SEGMENT: BA  
LANGUAGE: Unavailable

  
ABSTRACT: Holstein cows fed concentrate:hay diets also were fed for 14 days supplements of soybean oil plus casein, soybean oil protected from ruminal hydrogenation by encapsulation in a casein-formaldehyde matrix, cottonseed oil plus casein or cottonseed oil protected with casein-formaldehyde. The supplements were fed at rates to give a linoleic acid (18:2) intake of 225 g/day. Yields of milk and \*\*\*milk\*\*\* protein were not affected by treatment. Milk 18:2 was not increased by the unprotected soybean oil or cottonseed oil but was increased by protected soybean and cottonseed oil from a control of 2.3 to 5.7% of total milk fat. Milk 18:0 and 18:1 also increased. Compensatory declines were observed in milk 16:0 and 14:0 acids. In fecal fatty acids during the treatment periods, percentage of 18:2 of the total

fat decreased and 18:0 markedly increased. These results indicate hydrogenation of the dietary oils in the alimentary tract or a differential absorption. Fecal 16:0 and 14:0 decreased.

**CONCEPT CODE:**

- Biochemistry studies - General 10060
- Biochemistry studies - Proteins, peptides and amino acids 10064
- Biochemistry studies - Lipids 10066
- Metabolism - Lipids 13006
- Nutrition - General studies, nutritional status and methods 13202
- Nutrition - Lipids 13222
- Food technology - Dairy products 13518
- Food technology - Evaluations of physical and chemical properties 13530
- Food technology - Preparation, processing and storage 13532
- Digestive system - Physiology and biochemistry 14004
- Animal production - Feeds and feeding 26504
- Agronomy - Forage crops and fodder 52506

**INDEX TERMS:**

- Major Concepts
  - Animal Husbandry (Agriculture); Digestive System (Ingestion and Assimilation); Foods; Metabolism; Nutrition

**INDEX TERMS:**

- Miscellaneous Descriptors
  - HOLSTEIN COTTONSEED SOYBEAN CASEIN FORMALDEHYDE
  - LINOLEIC-ACID

**ORGANISM:**

- Classifier
  - Leguminosae 26260
- Super Taxa
  - Dicotyledones; Angiospermae; Spermatophyta; Plantae
- Taxa Notes
  - Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

**ORGANISM:**

- Classifier
  - Malvaceae 26330
- Super Taxa
  - Dicotyledones; Angiospermae; Spermatophyta; Plantae
- Taxa Notes
  - Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

**ORGANISM:**

- Classifier
  - Bovidae 85715
- Super Taxa
  - Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia
- Taxa Notes
  - Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

**REGISTRY NUMBER:**

- 50-00-0 (FORMALDEHYDE)
- 60-33-3 (LINOLEIC-ACID)

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ACCESSION NUMBER: 1978:144196 BIOSIS

DOCUMENT NUMBER: PREV197865031196; BA65:31196

TITLE: IN-VIVO MEASUREMENT OF RESISTANCE OF FORMALDEHYDE  
TREATED OILSEED SUPPLEMENTS TO HYDROGENATION IN THE RUMEN.

AUTHOR(S): HOOD R L [Reprint author]

CORPORATE SOURCE: CSIRO DIV FOOD RES, PO BOX 52, NORTH RYDE, NSW 2113, AUST

SOURCE: Journal of Dairy Science, (1977) Vol. 60, No. 11, pp. 1701-1705.

CODEN: JDSCAE. ISSN: 0022-0302.

DOCUMENT TYPE: Article  
FILE SEGMENT: BA  
LANGUAGE: ENGLISH

ABSTRACT: A technique is described for the *in vivo* measurement of resistance of a **formaldehyde-protected** oilseed supplement to hydrogenation by microorganisms in the rumen. The calculations are derived from changes in fatty acid composition of the **milk** fat of \*\*\*cows\*\*\* after dietary supplementation with a protected oilseed. The sunflower seed-casein supplement was about 62% protected although protection varied between cows. Efficiency of transfer of linoleic acid from oilseed supplement to **milk** lipid was 14%. This technique has application for improvement of supplement technology, for selection of \*\*\*cows\*\*\*, and for basal diets to be given with the supplement to achieve maximum transfer of linoleic acid from supplement to **milk** fat.

CONCEPT CODE: Mathematical biology and statistical methods 04500  
Biochemistry studies - General 10060  
Biochemistry studies - Lipids 10066  
Metabolism - General metabolism and metabolic pathways 13002  
Metabolism - Lipids 13006  
Nutrition - General studies, nutritional status and methods 13202  
Food technology - Dairy products 13518  
Food technology - Evaluations of physical and chemical properties 13530  
Food technology - Preparation, processing and storage 13532  
Food technology - Synthetic, supplemental and enrichment foods 13534  
Digestive system - Physiology and biochemistry 14004  
Reproductive system - Physiology and biochemistry 16504  
Animal production - Feeds and feeding 26504  
Microorganisms - General 29500  
Agronomy - Oil crops 52514

INDEX TERMS: Major Concepts  
Animal Husbandry (Agriculture); Digestive System (Ingestion and Assimilation); Foods; Metabolism; Microbiology; Nutrition

INDEX TERMS: Miscellaneous Descriptors  
MICROORGANISM SUNFLOWER SEED CASEIN MILK  
FATTY-ACID LINOLEIC-ACID

ORGANISM: Classifier  
Microorganisms 01000  
Super Taxa  
Microorganisms  
Taxa Notes  
Microorganisms

ORGANISM: Classifier  
Angiospermae 25200  
Super Taxa  
Spermatophyta; Plantae  
Taxa Notes  
Angiosperms, Plants, Spermatophytes, Vascular Plants

ORGANISM: Classifier  
Compositae 25840  
Super Taxa  
Dicotyledones; Angiospermae; Spermatophyta; Plantae  
Taxa Notes  
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

L121 ANSWER 27 OF 35 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on  
STN

ACCESSION NUMBER: 1977:129485 BIOSIS

DOCUMENT NUMBER: PREV197763024349; BA63:24349

TITLE: EFFECTS OF PROTECTED CYCLO PROPENE FATTY-ACIDS ON THE

COMPOSITION OF RUMINANT MILK FAT.

AUTHOR(S): COOK L J; SCOTT T W; MILLS S C; FOGERTY A C; JOHNSON A R

SOURCE: Lipids, (1976) Vol. 11, No. 9, pp. 705-711.

CODEN: LPDSAP. ISSN: 0024-4201.

DOCUMENT TYPE: Article

FILE SEGMENT: BA

## ABSTRACT:Unsaturated fatty acid

\*\*\*ruminal\*\*\* hydrogenation, and, when fed to lactat

\*\*\*ruminants\*\*\* , are incorporated into **milk** triacylglyc-

reduces the melting point of milk triglycerides and makes softer

\*\*\*butter\*\*\* fat. Harder butter fat may be made by feeding small

amounts of protected cyclopropene fatty acids. *Sterculia foetida* s.

rich source of cyclopropene fatty acids, was emulsified with casein

and spray dried to yield a free flowing dry powder. When this material was

\*\*\*treated\*\*\* with formaldehyde and fed to lactating

\*\*\*goats\*\*\* (.approx. 1 g cyclopropene fatty acids/day)

substantial increases in the proportions of stearic acid and decreases in the

proportions of oleic acid in milk fat. Similar results were obtained

when the formaldehyde-treated supplements were fed to

\*\*\*lactating\*\*\* cows (.approx. 3 g cyclopropene fatty acids/day).

The effect was considerably less apparent when the *S. foetida* seed oil-casein

supplement was not treated with formaldehyde, suggesting

ORGANISM: Classifier  
                   Bovidae 85715  
                   Super Taxa  
                     Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia  
                   Taxa Notes  
                     Animals, Artiodactyls, Chordates, Mammals, Nonhuman  
                     Vertebrates, Nonhuman Mammals, Vertebrates  
 REGISTRY NUMBER: 50-00-0 (FORMALDEHYDE)  
                   60-33-3 (LINOLEIC-ACID)

L121 ANSWER 26 OF 35 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on  
 STN

ACCESSION NUMBER: 1977:159676 BIOSIS  
 DOCUMENT NUMBER: PREV197763054540; BA63:54540  
 TITLE: PRODUCTION COMPOSITION AND MANUFACTURING PROPERTIES OF  
 MILK FROM GRAZING DAIRY COWS FED ON A  
 FORMALDEHYDE TREATED SUNFLOWER SEED  
 SUPPLEMENT.  
 AUTHOR(S): BARTSCH B D; ELLIS N J S; MCLEAN D M; RADCLIFFE J C  
 SOURCE: Australian Journal of Agricultural Research, (1976) Vol.  
 27, No. 6, pp. 917-928.  
 CODEN: AJAE9. ISSN: 0004-9409.

DOCUMENT TYPE: Article  
 FILE SEGMENT: BA  
 LANGUAGE: Unavailable  
 ABSTRACT: Cows (8) in each of 4 treatment groups grazed regulated areas of green oats and consumed either 0, 1.3, 2.5 or 3.1 kg of a \*\*\*formaldehyde\*\*\* -treated sunflower seed supplement (FSS) per head per day. The digestible energy content of the rations was balanced with hammer-milled barley. Milk fat percentages and milk fat yields were higher from cows fed on FSS, responses being in proportion to the amount of FSS eaten. Protein percentages were significantly lower in milk from cows fed on FSS. Milk and protein yields did not differ significantly between treatments. The linoleic acid (C18:2) content of milk fat was 3-5 times as high in \*\*\*cows\*\*\* fed on FSS as in those not fed on FSS. The stability to oxidation and the rennet curd firmness of the milk decreased as the percentage of C18:2 in milk fat increased. Changes in the heat stability of \*\*\*milk\*\*\* were associated with the introduction of FSS feeding. Plasma cholesterol levels increased with increasing intakes of FSS. Milk of high C18:2 content can be produced by dairy cows fed on FSS and grazed on green oats. The milk readily oxidizes and its properties for cheese and skim milk powder manufacture are altered.

CONCEPT CODE: Biochemistry studies - Proteins, peptides and amino acids 10064  
                   Biochemistry studies - Sterols and steroids 10067  
                   Biophysics - Molecular properties and macromolecules 10506  
                   Metabolism - Sterols and steroids 13008  
                   Metabolism - Proteins, peptides and amino acids 13012  
                   Nutrition - General studies, nutritional status and methods 13202  
                   Food technology - Dairy products 13518  
                   Food technology - Evaluations of physical and chemical properties 13530  
                   Food technology - Preparation, processing and storage 13532  
                   Blood - Blood and lymph studies 15002  
                   Reproductive system - Physiology and biochemistry 16504  
                   Animal production - Feeds and feeding 26504  
                   Agronomy - Forage crops and fodder 52506

that cyclopropene fatty acids are hydrogenated in the rumen as are other unsaturated fatty acids. The effect of feeding protected cyclopropene fatty acids on the stearic: oleic ratio in milk fat is probably due to cyclopropene-mediated inhibition of the mammary desaturase enzymes.

CONCEPT CODE: Biochemistry studies - Proteins, peptides and amino acids 10064  
 Biochemistry studies - Lipids 10066  
 Nutrition - General studies, nutritional status and methods 13202  
 Food technology - Dairy products 13518  
 Food technology - Evaluations of physical and chemical properties 13530  
 Food technology - Preparation, processing and storage 13532  
 Digestive system - Physiology and biochemistry 14004  
 Animal production - Feeds and feeding 26504  
 Horticulture - Tropical, subtropical fruits and plantation crops 53004

INDEX TERMS: Major Concepts  
 Animal Husbandry (Agriculture); Digestive System (Ingestion and Assimilation); Foods; Nutrition

INDEX TERMS: Miscellaneous Descriptors  
 STERCULIA-FOETIDA GOAT STEARIC-ACID OLEIC-ACID  
 MAMMARY DESATURASE ENZYME INHIBITION

ORGANISM: Classifier  
 Sterculiaceae 26810  
 Super Taxa  
 Dicotyledones; Angiospermae; Spermatophyta; Plantae  
 Taxa Notes  
 Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

ORGANISM: Classifier  
 Bovidae 85715  
 Super Taxa  
 Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia  
 Taxa Notes  
 Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

REGISTRY NUMBER: 2781-85-3 (CYCLOPROPENE)  
 57-11-4 (STEARIC-ACID)  
 112-80-1 (OLEIC-ACID)  
 103843-28-3 (DESATURASE)

L121 ANSWER 28 OF 35 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN

ACCESSION NUMBER: 1973:111885 BIOSIS

DOCUMENT NUMBER: PREV197355011878; BA55:11878

TITLE: FORMALDEHYDE TREATED CASEIN SAFFLOWER OIL SUPPLEMENT FOR DAIRY COWS PART 2 EFFECT ON THE FATTY-ACID COMPOSITION OF PLASMA AND MILK LIPIDS.

AUTHOR(S): COOK L J; SCOTT T W; PAN Y S  
 SOURCE: Journal of Dairy Research, (1972) Vol. 39, No. 2, pp. 211-218.  
 CODEN: JDRSAN. ISSN: 0022-0299.

DOCUMENT TYPE: Article  
 FILE SEGMENT: BA  
 LANGUAGE: Unavailable  
 CONCEPT CODE: Genetics - Animal 03506  
 Biochemistry studies - General 10060  
 Biochemistry studies - Lipids 10066

Metabolism - Lipids 13006  
 Nutrition - General studies, nutritional status and methods 13202  
 Nutrition - General dietary studies 13214  
 Food technology - Fats and oils 13514  
 Food technology - Dairy products 13518  
 Food technology - Synthetic, supplemental and enrichment foods 13534  
 Digestive system - Physiology and biochemistry 14004  
 Blood - Blood and lymph studies 15002  
 Reproductive system - Physiology and biochemistry 16504  
 Animal production - Feeds and feeding 26504  
 Medical and clinical microbiology - General and methods 36001  
 Veterinary science - Microbiology 38006  
 Agronomy - Oil crops 52514  
 Major Concepts

INDEX TERMS:

Animal Husbandry (Agriculture); Blood and Lymphatics (Transport and Circulation); Digestive System (Ingestion and Assimilation); Foods; Infection; Metabolism; Nutrition; Veterinary Medicine (Medical Sciences)

INDEX TERMS:

Miscellaneous Descriptors

RUMEN MICROORGANISMS LINOLEIC-ACID OCTA DECENOIC-ACID PALMITIC-ACID TRI GLYCERIDE MYRISTIC-ACID LIPOGENESIS HYDROGENATE

ORGANISM:

Classifier

Microorganisms 01000

Super Taxa

Microorganisms

Taxa Notes

Microorganisms

ORGANISM:

Classifier

Compositae 25840

Super Taxa

Dicotyledones; Angiospermae; Spermatophyta; Plantae

Taxa Notes

Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants

ORGANISM:

Classifier

Bovidae 85715

Super Taxa

Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

REGISTRY NUMBER:

50-00-0 (FORMALDEHYDE)

60-33-3 (LINOLEIC-ACID)

26764-26-1Q (OCTA DECENOIC-ACID)

27104-13-8Q (OCTA DECENOIC-ACID)

57-10-3 (PALMITIC-ACID)

544-63-8 (MYRISTIC-ACID)

L121 ANSWER 29 OF 35 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN

ACCESSION NUMBER: 1972:181975 BIOSIS

DOCUMENT NUMBER: PREV197254011969; BA54:11969

TITLE: MILK FAT WITH INCREASED POLY UNSATURATED FATTY-ACIDS.

AUTHOR(S): PLOWMAN R D; BITMAN J; GORDON C H; DRYDEN L P; GOERING H K; EDMONDSON L F; YONCOSKIE R A; DOUGLAS F W JR; WRENN T R

SOURCE: Journal of Dairy Science, (1972) Vol. 55, No. 2, pp.

204-207.

CODEN: JDSCAE. ISSN: 0022-0302.

DOCUMENT TYPE:

Article

FILE SEGMENT:

BA

LANGUAGE:

Unavailable

CONCEPT CODE:

Biochemistry studies - General 10060

Biochemistry studies - Proteins, peptides and amino acids 10064

Biochemistry studies - Lipids 10066

Metabolism - Lipids 13006

Metabolism - Proteins, peptides and amino acids 13012

Nutrition - General dietary studies 13214

Nutrition - Lipids 13222

Nutrition - Proteins, peptides and amino acids 13224

Food technology - Dairy products 13518

Food technology - Preparation, processing and storage 13532

Food technology - Synthetic, supplemental and enrichment foods 13534

Digestive system - Physiology and biochemistry 14004

Reproductive system - General and methods 16501

Animal production - Feeds and feeding 26504

Veterinary science - General and methods 38002

INDEX TERMS:

Major Concepts

Animal Husbandry (Agriculture); Digestive System  
(Ingestion and Assimilation); Metabolism; Nutrition;  
Veterinary Medicine (Medical Sciences)

INDEX TERMS:

Miscellaneous Descriptors

SAFFLOWER-D OIL CASEIN CATTLE  
FORMALDEHYDE TREATMENT LINOLEIC-ACID  
RUMEN HYDROGENATION

ORGANISM:

Classifier

Compositae 25840

Super Taxa

Dicotyledones; Angiospermae; Spermatophyta; Plantae

Taxa Notes

Angiosperms, Dicots, Plants, Spermatophytes, Vascular  
Plants

ORGANISM:

Classifier

Bovidae 85715

Super Taxa

Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia

Taxa Notes

Animals, Artiodactyls, Chordates, Mammals, Nonhuman  
Vertebrates, Nonhuman Mammals, Vertebrates

REGISTRY NUMBER:

50-00-0 (FORMALDEHYDE)

60-33-3 (LINOLEIC-ACID)

L121 ANSWER 30 OF 35 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED.  
on STN

ACCESSION NUMBER:

2004-0021940 PASCAL

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TITLE (IN ENGLISH):

Carcass, sensory, and adipose tissue traits of Brangus  
steers fed casein-formaldehyde-protected  
starch and/or canola lipid

AUTHOR:

GILBERT C. D.; LUNT D. K.; MILLER R. K.; SMITH S. B.

CORPORATE SOURCE:

Department of Animal Science, Texas A&M University,  
College Station, 77843, United States

SOURCE:

Journal of animal science, (2003), 81(10), 2457-2468,  
refs. 1 p.1/4

DOCUMENT TYPE: ISSN: 0021-8812  
BIBLIOGRAPHIC LEVEL: Journal  
COUNTRY: Analytic  
LANGUAGE: United States  
AVAILABILITY: English  
INIST-3247, 354000113041600110  
ABSTRACT: We predicted that providing **rumen-protected** starch to the small intestine would increase adiposity of intramuscular adipose tissue, and hence marbling scores. Eighteen 15-mo-old Brangus steers were assigned randomly to one of three dietary treatment groups: 1) cracked corn (Corn); 2) casein-**formaldehyde-protected** lipid (Canola Lipid); or 3) casein-**formaldehyde-protected** starch (Marble Plus). All diets were equally balanced for ME (2.91 Mcal/kg), CP (12.5%), and DM (89%). Ether extract was 3.7, 6.9, and 6.9% for the Corn, Canola Lipid, and Marble Plus diets, respectively, and the Marble Plus also contained 3.7% protected starch. Steers were fed the diets for 126 d before slaughter. Average daily feed intake (as-fed basis), ADG, and feed:gain ratio ( $P \geq 0.23$ ) did not differ among treatments. Carcasses across treatments did not differ ( $P = 0.26$ ) in adjusted fat thickness, longissimus muscle area, hot carcass weight, dressing percentage, marbling scores, or USDA quality grade. Percentage of kidney, pelvic, and heart fat was higher ( $P < 0.01$ ) and USDA yield grade tended ( $P = 0.08$ ) to be higher, for carcasses from Canola Lipid- and Marble Plus-fed steers than for carcasses from Corn-fed steers. Of the descriptive meat sensory attributes, connective tissue amount ( $P = 0.06$ ) and painty flavor ( $P = 0.12$ ) tended to be greater in meat from Marble Plus steers than from Canola Lipid steers. Percentages of 18:2n-6 and 18:3n-3 were higher ( $P < 0.01$ ), and 15:0, 16:0, and 17:0 were lower ( $P \leq 0.07$ ) in tissues from Canola Lipid- and Marble Plus-fed steers than in Corn-fed steers. Mean adipocyte volume was greater ( $P = 0.02$ ) in i.m. adipose tissue and tended ( $P = 0.11$ ) to be greater in s.c. adipose tissue of Canola Lipid steers (848 pL) vs. Corn steers (536 pL). Glucose incorporation into total lipids, glyceride-glycerol, and **fatty acid** fractions was highest ( $P < 0.01$ ) in s.c. adipose tissue from steers fed Marble Plus but was unaffected ( $P \geq 0.33$ ) by diet in i.m. adipose tissue. **Fatty acid** synthetase activity tended ( $P = 0.08$ ) to be higher in s.c. adipose tissue of Marble Plus steers, and NADP-malic dehydrogenase activity was higher ( $P = 0.03$ ) in i.m. adipose tissue of Canola Lipid steers. We conclude that Marble Plus did not improve carcass quality, but also did not reduce beef sensory attributes. Any differences we observed in carcass characteristics, adipose tissue cellularity, or lipogenesis apparently were caused by the protected lipid rather than the protected starch.

CLASSIFICATION CODE: 002A36C03; Life sciences; Biological sciences; Agriculture, Animal production; Terrestrial vertebrates zootechny  
002A35B15; Life sciences; Biological sciences; Agriculture, Food industry

CONTROLLED TERM: 002A35B05; Life sciences; Biological sciences; Agriculture, Food industry  
 Animal feeding; Digestion; Protective treatment; Carcass; Body composition; Adipose tissue; Organoleptic properties; Treatment efficiency; Experimental study; Beef **cattle**; Beef; Production quality; **Formaldehyde**; Lipids; Casein; Starch; Canola oil; Meat production Artiodactyla; Ungulata; Mammalia; Vertebrata; Farming animal; **Ruminant** animal; **Milk** protein; Polysaccharide; Vegetable oil; Animal production

BROADER TERM:

L121 ANSWER 31 OF 35 FSTA COPYRIGHT 2004 IFIS on STN  
 ACCESSION NUMBER: 1972(01):G0003 FSTA  
 TITLE: Protection of dietary polyunsaturated **fatty acids** against microbial hydrogenation in **ruminants**.  
 AUTHOR: Scott, T. W.; Cook, L. J.; Mills, S. C.  
 CORPORATE SOURCE: CSIRO, Div. of Animal Physiol., Prospect, NSW, Australia  
 SOURCE: Journal of the American Oil Chemists' Society, (1971) 48 (7) 358-364, 21 ref.

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ABSTRACT: Polyunsaturated **fatty acids** are normally hydrogenated by microorganisms in the rumen. Because of this hydrogenation, **ruminant** triglycerides contain very low proportions of polyunsaturated **fatty acids**. A new process is described whereby polyunsaturated oil droplets are **protected** from **ruminal** hydrogenation by encapsulation with **formaldehyde**-treated protein. The **formaldehyde**-treated protein resists breakdown in the **rumen** thereby **protecting** the **fatty acids** against microbial hydrogenation. When these protected oils are fed to **ruminants** the **formaldehyde**-protein complex is hydrolysed in the acidic conditions of the abomasum and the **fatty acids** are absorbed from the small intestine. This results in substantial changes in the triglycerides of plasma, **milk** and depot fats, in which the proportion of polyunsaturated **fatty acids** is increased from 2-5% to 20-30%. These effects are observed in the plasma and **milk** within 24-48 h of feeding while a longer period is necessary to alter the composition of depot fat. The implications of these findings are discussed in relation to human and **ruminant** nutrition.

CLASSIFICATION CODE: G (Catering, Speciality and Multicomponent Foods)

CONTROLLED TERM: ANIMALS; ENCAPSULATION; **FATTY ACIDS**; **FORMALDEHYDE**; HYDROGENATION; MICROORGANISMS; **MILK**; OILS; PROTEINS; FAT; FATS (ANIMAL); FEED; MICROBIAL; **MILK (FATS)**; **MILK**; **FAT**; POLYUNSATURATED **FATTY ACIDS**; PROTECTION # DIETARY; PROTEIN; RUMINANTS; UNSATURATED # **FATTY ACID COMPOSITION**; UNSATURATED # **FATTY ACID COMPOSITION** # DEPOT; UNSATURATED # TREATED; **FATTY ACIDS**; FEED

## ; FORMALDEHYDE ; HYDROGENATION ; OILS

L121 ANSWER 32 OF 35 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN  
 ACCESSION NUMBER: 2001-226518 [23] WPIDS  
 DOC. NO. CPI: C2001-067577  
 TITLE: Feed supplement for altering **milk** fat profile from female **ruminant** livestock such that desired proportions and/or types of **fatty acids** are produced, which are useful in the production of **milk, butter, cheese, yogurt, chocolate.**  
 DERWENT CLASS: D13  
 INVENTOR(S): ASHES, J R; GULATI, S K; SCOTT, T W  
 PATENT ASSIGNEE(S): (CSIR) COMMONWEALTH SCI & IND RES ORG  
 COUNTRY COUNT: 95  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN	IPC
WO 2001011978	A1	20010222 (200123)*	EN	41	A23C009-14		
RW:	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW						
W:	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW						
AU 2000062556	A	20010313 (200134)				A23C009-14	
EP 1209981	A1	20020605 (200238)	EN			A23C009-14	
R:	AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI						
NZ 517728	A	20030131 (200319)				A23C009-14	

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001011978	A1	WO 2000-AU953	20000811
AU 2000062556	A	AU 2000-62556	20000811
EP 1209981	A1	EP 2000-949020	20000811
		WO 2000-AU953	20000811
NZ 517728	A	NZ 2000-517728	20000811
		WO 2000-AU953	20000811

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000062556	A Based on	WO 2001011978
EP 1209981	A1 Based on	WO 2001011978
NZ 517728	A Based on	WO 2001011978

PRIORITY APPLN. INFO: AU 1999-2218 19990813

## INT. PATENT CLASSIF.:

MAIN:	A23C009-14
SECONDARY:	A23D009-02; A23K001-00; A23K001-18

## BASIC ABSTRACT:

WO 200111978 A UPAB: 20010425

NOVELTY - An alteration in the amount and/or type of protected lipid feed, producing **milk** products with a wide spectrum of physical characteristics, such that expensive fractional crystallization and enzymatic interesterification procedures are no longer needed

DETAILED DESCRIPTION - The **fatty acid** profile of **milk** from female **ruminant** livestock is altered to comprise the following types and proportions of **fatty acids**: 25-45wt% C18:1 cis; 4-15wt% C18:2; 1-8wt% C18:3; and/or 1-3wt% C20:5 and C22:6. The process comprises feeding protected lipid to the livestock such that 60-90% of it can pass through the rumen undigested leaving it available for **post-ruminal** digestion. The **protected** lipid is produced by the emulsification of lipid with protein, and mixing in 1.5-3 g. of **formaldehyde** per 100 g. crude portion of the emulsified lipid-protein complex. INDEPENDENT CLAIMS are also included for:

(1) a similar process where the **fatty acid** profile comprises 25-35wt% C16:0 cis, 20-30wt% C18:0 and 20-25wt% C18:1, and can also pass through the rumen in a similar amount; and

(2) **milk** fat obtained from a **ruminant** fed with the protected component(s). comprises nutritionally-desirable soft fats including n-3 and n-6 essential **fatty acids**, conjugated linoleic acid, and 20C and 22C polyphenolic **fatty acids**.

USE - The feedstuff prepared is useful for the production of **milk** fat from the **ruminant** animal, this fat is used in the production of **milk, butter, cheese, yogurt, chocolate or infant formula**.

ADVANTAGE - The process obviates the need for expensive fractional crystallization and enzymatic interesterification procedures are no longer needed

DESCRIPTION OF DRAWING(S) - The drawing shows a graphic representation of the role of foodstuffs. Including protected lipids, in altering the proportions of **fatty acids** in **milk**.

Dwg.1/2

FILE SEGMENT: CPI

FIELD AVAILABILITY: AB; GI

MANUAL CODES: CPI: D03-G

L121 ANSWER 33 OF 35 USPATFULL on STN

ACCESSION NUMBER: 2001:119047 USPATFULL

TITLE: ENHANCING IMMUNE RESPONSE IN ANIMALS

INVENTOR(S): RICHARDSON, KURT E., MAYSVILLE, GA, United States

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2001009668	A1	20010726
	US 6379676	B2	20020430

APPLICATION INFO.: US 1999-265821 A1 19990310 (9)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC, FOURTH FLOOR, 1755 JEFFERSON DAVIS HIGHWAY, ARLINGTON, VA, 22202

NUMBER OF CLAIMS: 18

EXEMPLARY CLAIM: 1

LINE COUNT: 789

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for improving the immune response of an animal to a vaccine, comprising: feeding an animal a diet of contamination-resistant **feed**, and treating said animal with an anti-viral or anti-bacterial vaccine.

IT 50-00-0, Formaldehyde, biological studies  
(feed treated with; enhancing immune response in animals)

L121 ANSWER 34 OF 35 USPATFULL on STN  
ACCESSION NUMBER: 80:33182 USPATFULL  
TITLE: Animal feeds  
INVENTOR(S): Leroy, Françoise A. J., St. Leu la Foret, France  
Zelter, Zelmen, Paris, France  
Francois, Andre' C., Paris, France  
Chassin, Andre', Saint-Junien, France  
Rodeaud, Jacques, Chabanais, France  
PATENT ASSIGNEE(S): Institut National de la Recherche Agronomique and  
Aussedat-Rey, Paris, France (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4211795		19800708
APPLICATION INFO.:	US 1974-532153		19741224 (5)
DISCLAIMER DATE:			19870421
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1969-845902, filed on 29 Jul 1969, now Defensive Publication No. And Ser. No. US 1966-524837, filed on 3 Feb 1966, now patented, Pat. No. US 3507662		

	NUMBER	DATE
PRIORITY INFORMATION:	FR 1965-4208	19650203
	FR 1965-4787	19650203
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Bernstein, Hiram H.	
LEGAL REPRESENTATIVE:	Oblon, Fisher, Spivak, McClelland & Maier	
NUMBER OF CLAIMS:	7	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	4 Drawing Figure(s); 4 Drawing Page(s)	
LINE COUNT:	1730	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A nitrogenous animal feed complex and especially a proteinaceous animal feed complex, comprising a protein organic tanning substance complex that protects the proteinaceous feed against bacterial deamination in the upper regions of the alimentary tract (typically in the rumen of a ruminant), and dissociates in the presence of the proteolytic enzymes present in the lower regions of the alimentary tract.

IT 50-00-0, biological studies  
(protein tanning with, for ruminant feeds)

L121 ANSWER 35 OF 35 USPATFULL on STN  
ACCESSION NUMBER: 77:43613 USPATFULL  
TITLE: Method for manufacturing ruminant feed supplements comprising a protein-aldehyde complex  
INVENTOR(S): Rawlings, Robert M., Boise, ID, United States  
Procter, Donald, Boise, ID, United States  
PATENT ASSIGNEE(S): Commonwealth Scientific and Industrial Research Organization, Australia (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4042718		19770816
APPLICATION INFO.:	US 1975-642998		19751222 (5)

DOCUMENT TYPE: Utility  
FILE SEGMENT: Granted  
PRIMARY EXAMINER: Golian, Joseph M.  
LEGAL REPRESENTATIVE: Richards, Harris & Medlock  
NUMBER OF CLAIMS: 17  
EXEMPLARY CLAIM: 1  
LINE COUNT: 472  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An improved method for manufacturing a feed supplement for ruminants in which lipids are encapsulated in a protective protein-aldehyde complex coating which includes the steps of forming an emulsified product in which particles of lipid material are surrounded by protein, treating the emulsified product with an aldehyde and allowing a gel to form, contacting the gel with an effective amount of an acid constituent to affect syneresis, and thereafter recovering the concentrated gel constituent. The gel can thereafter be dried to form a free-flowing particulate composition.

IT 50-00-0D, protein complexes  
(fat encapsulation with, for feed)

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